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CRPL-F169 PART A

FOR OFFICIAL USE

PART A
IONOSPHERIC DATA

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SEPTEMBER 1958

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F169
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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of $foF2$ (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of $h'F$ (and $h'E$ near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For $foF2$, as equal to or less than $foF1$.
2. For $h'F2$, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D , only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE , or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of $h'Es$ missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949
December	150*	150*	150	42	11	15	33	53	86	108	
November	150*	150*	147	35	10	16	38	52	87	112	
October	150*	150*	135	31	10	17	43	52	90	114	
September	150*	150*	119	30	8	18	46	54	91	115	
August	150*	150*	105	27	8	18	49	57	96	111	
July	150*	150*	95	22	8	20	51	60	101	108	
June	150*	150*	89	18	9	21	52	63	103	108	
May	150*	150*	77	16	10	22	52	68	102	108	
April	150*	150*	68	13	10	24	52	74	101	109	
March	150*	150*	60	14	11	27	52	78	103	111	
February	150*	150*	150*	53	14	12	29	51	82	103	113
January	150*	150*	150*	48	12	14	30	53	85	105	112

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

Observed Sunspot Number

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:

Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:

Watheroo, Western Australia

Meteorological Service of the Belgian Congo and Ruanda-Urundi:

Bunia, Belgian Congo
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:

Falkland Is.
Ibadan, Nigeria (University College of Ibadan)
Slough, England

Defence Research Board, Canada:

Churchill, Canada
Victoria, Canada

Radio Wave Research Laboratories, National Taiwan University,

Taipeh, Formosa, China:
Formosa, China

Danish National Committee of URSI:

Narsarssuak, Greenland

The Royal Netherlands Meteorological Institute:

De Bilt, Holland
Paramaribo, Surinam

Central Institute of Meteorology, Budapest, Hungary:

Budapest, Hungary

Indian Council of Scientific and Industrial Research, Radio Research Committee, New Delhi, India:
Bombay (All India Radio)
Delhi (All India Radio)
Tiruchi (All India Radio)

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories,
Tokyo, Japan:
Tokyo (Kokubunji), Japan

Christchurch Geophysical Observatory, New Zealand Department of
Scientific and Industrial Research:
Cape Hallett (Adare)
Rarotonga, Cook Is.
Scott Base

Manila Observatory:
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio
Propagation, Moscow, U.S.S.R.:
Moscow

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Fletchers Ice I.
Ft. Monmouth, New Jersey
Grand Bahama I.
Okinawa I.
St. John's, Newfoundland

National Bureau of Standards (Central Radio Propagation
Laboratory):
Anchorage, Alaska
Chiclayo, Peru

National Bureau of Standards (Central Radio Propagation Laboratory) continued:

Chimbote, Peru

Fairbanks (College), Alaska (Geophysical Institute of the University of Alaska)

Huancayo, Peru (Instituto Geofisico de Huancayo)

Maui, Hawaii

Panama Canal Zone

Point Barrow, Alaska

Puerto Rico, W. I.

San Francisco, California (Stanford University)

Washington, D. C.

ERRATA

1. CRPL-F168(A), p. 4, table 20, and p. 22, fig. 40: Column heading "h'F" should read "h'F1" and the corresponding change should be made in curve label on the graph.
2. CRPL-F168(A), p. 34, fig. 85: The >5.9 reading on the foF2 curve occurred at 21 hour instead of 18 hour.

TABLES OF IONOSPHERIC DATA

June 1958 - February 1957

Table 1

Washington, D. C. (38.7°N, 77.1°W)							June 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00	7.0	300						2.55
01	6.5	310						2.50
02	6.2	310						2.50
03	5.55	305						2.50
04	5.3	<310						2.55
05	5.5	290			117	1,80		2.72
06	(485)	6.0	250	---	111	2.58	3.0	2.72
07	390	6.15	230	4.6	109	3.12	3.4	2.52
08	460	6.7	220	5.1	107	3.50	3.8	2.52
09	515	6.9	210	5.3	105	3.75	4.0	2.42
10	470	6.9	210	5.5	103	3.90	4.1	2.48
11	480	6.9	200	5.6	102	4.00	4.3	2.45
12	520	7.1	205	5.6	103	4.00	>4.2	2.35
13	500	7.1	220	5.6	105	4.05		2.40
14	480	7.15	220	5.6	105	4.00		2.45
15	490	7.2	220	5.5	105	3.95	4.0	2.45
16	450	7.3	225	5.4	109	3.65		2.50
17	420	7.35	230	5.0	109	3.30		2.55
18	360	7.6	250	---	111	2.80		2.60
19	---	7.6	275		119	2.00		2.62
20	7.95	290						2.65
21	8.0	<290						2.60
22	7.7	295						2.60
23	7.35	300						2.60

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Point Barrow, Alaska (71.3°N, 156.8°W)							May 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00	(6.3)	320		---	---	5.0		(2.55)
01	(6.2)	325	---	---	---	3.8		2.58
02	(6.05)	<325	---	---	---	3.2		2.50
03	(6.1)	305	---	---	119	2.02	2.8	2.55
04	(425)	6.4	295	---	115	2.22	2.6	2.45
05	445	6.05	275	4.0	114	2.52		2.42
06	460	6.3	265	4.2	111	2.90		2.40
07	500	6.45	250	4.4	111	3.05		2.35
08	500	6.8	250	4.8	108	3.22		2.30
09	500	6.6	250	5.0	107	(3.30)		2.35
10	480	6.85	240	5.1	105	3.45		2.35
11	510	6.8	230	5.0	111	(3.55)		2.35
12	520	6.6	235	5.0	111	3.60		2.30
13	545	6.7	240	5.1	113	3.52		2.35
14	500	6.85	230	5.1	114	3.45		2.35
15	500	6.8	235	5.0	111	3.35		2.35
16	475	6.8	(240)	4.8	109	3.20		2.30
17	475	6.7	245	4.8	109	3.08		2.40
18	445	6.3	(260)	4.5	111	3.00		2.45
19	(450)	6.2	270	4.1	113	2.80		2.50
20	---	5.95	290	---	114	2.72		2.60
21	---	6.0	315	---	114	2.90	3.1	2.60
22	---	5.9	300	---	131	2.40	2.9	2.70
23	---	>6.0	310	---	<133	(2,45)	3.8	2.52

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Anchorage, Alaska (61.2°N, 149.9°W)							May 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00	(5.2)					2.5		(2.40)
01	(5.4)					2.7		(2.40)
02	(5.4)					1.8		(2.45)
03	(5.65)			---	---	2.3		(2.40)
04	(6.0)		(3.6)	117	1,98			2.45
05	(6.6)		4.0	111	2.40			2.40
06	6.95		4.4	109	2.80			2.35
07	6.9		4.7	107	3.12			2.35
08	6.9		4.9	105	3.35			2.30
09	7.0		5.0	105	3.50			2.30
10	6.95		5.2	105	3.60			2.30
11	6.8		5.3	105	3.70			2.32
12	7.0		5.3	105	3.70			2.30
13	6.8		5.3	105	3.70			2.30
14	7.0		5.3	105	3.60			2.35
15	6.8		5.3	105	3.50			2.40
16	6.9		5.2	107	3.30			2.40
17	6.8		(4.8)	109	3.08			2.50
18	6.8		4.6	109	2.75	3.0		2.60
19	6.7		---	115	2.42	2.6		2.65
20	6.5		130	---	2.2			2.75
21	6.1		---	---	1.6			2.70
22	(5.0)		---	---	2.8			2.60
23	(4.8)				2.0			(2.42)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Maui, Hawaii (20.6°N, 156.5°W)							June 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00			8.8		300			2.4
01			8.5		290			2.70
02			7.85		280			2.70
03			7.45		<290			2.60
04			7.15		310			2.55
05			6.8		320			2.50
06			6.8		290	---	125	2.00
07			7.7		245	---	109	2.90
08			(475)	8.5	230	5.4	107	3.42
09			520	9.3	<230	6.2	107	3.80
10			450	9.9	215	6.3	107	4.4
11			440	10.7	215	6.2	111	4.10
12			430	11.25	220	6.3	<113	4.20
13			425	11.55	220	6.4	111	4.20
14			405	11.7	<225	6.2	109	4.20
15			395	12.25	225	6.0	109	4.00
16			370	12.6	225	6.0	109	3.70
17			340	12.1	240	---	109	3.35
18			335	11.45	255	115	2.65	4.0
19			11.8		<290	---	---	3.6
20			10.65		310			4.2
21			10.2		310			3.0
22			9.3		315			2.4
23			9.1		<315			2.60

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Fairbanks, Alaska (64.9°N, 147.8°W)							May 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00			---					4.6
01			(6.1)					4.2
02			(6.0)					4.0
03			(6.1)					(2.50)
04			(6.6)					(2.48)
05			(7.0)					(2.48)
06			6.8					2.42
07			4.4					2.42
08			7.15					2.40
09			6.65					2.40
10			6.7					2.40
11			5.2					2.40
12			6.6					2.40
13			5.2					2.35
14			6.7					2.38
15			6.8					2.40
16			6.8					2.40
17			6.6					2.50
18			4.4					2.50
19			6.45					2.60
20			6.4					2.68
21			6.4					2.72
22			(6.0)					3.7
23			(5.8)					(2.50)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Narsarssuak, Greenland (61.2°N, 45.4°W)							May 1958	
Time	h'F2	foF2	h'F	foF1	h'F	foE	foEs	(M3000)F2
00			(5.3)		350			3.3
01			(5.2)		360			2.45
02			(5.0)		395	---		2.2
03			(4.65)		390	---		3.1
04			(4.0)		390	(3.3)	121	2.35
05			<600	(4.95)	300	3.8	100	2.72
06			550	5.4	270	4.3	105	3.05
07			575	5.8	265	4.7	103	3.30
08			550	6.15	245	4.9	105	3.50
09			540	6.5	230	5.1	104	3.60
10			540	6.8	235	5.4</td		

Adak, Alaska (51.9°N, 176.6°W)

Table 7

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.4	<320						2.45
01	6.1	<330						2.40
02	5.85	(330)						2.35
03	6.0	(350)			135	----		2.35
04	(490)	5.8	315	---	<132	----	1.8	2.30
05	485	6.85	290	4.0	101	2.30	2.6	2.40
06	480	7.8	250	4.4	105	2.88	3.2	2.40
07	475	8.2	240	4.9	101	3.20	3.8	2.35
08	440	8.3	230	5.1	101	3.50	4.4	2.40
09	445	8.4	(220)	5.5	101	3.75	4.5	2.40
10	470	8.2	<230	5.4	99	3.85	4.7	2.40
11	490	8.0	(220)	5.7	101	3.90	4.6	2.35
12	475	0.0	(225)	5.7	99	(3.95)	4.5	2.45
13	475	8.1	220	5.6	101	3.85	4.2	2.42
14	460	7.85	230	5.6	105	3.72	4.0	2.45
15	455	7.9	<235	5.5	105	3.62		2.50
16	(450)	7.8	240	4.9	109	3.40	3.6	2.55
17	(490)	7.9	<250	---	109	(3.02)	3.5	2.60
18	---	7.75	260	---	111	(2.60)	3.4	2.70
19		7.9	260		<127	----	2.8	2.75
20		7.8	260				2.8	2.70
21		7.7	(280)				2.7	2.60
22		7.3	(300)				2.4	2.50
23		7.0	(295)					2.50

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	7.0	310						2.45
01	6.6	<315						2.40
02	6.3	320						2.45
03	6.0	315						2.55
04	5.6	<320						2.50
05	---	6.0	290		121	----		2.75
06	---	6.65	250	---	115	2.60		2.68
07	450	7.0	235	4.0	111	3.10	3.2	2.70
08	480	7.4	225	5.0	109	3.55	3.7	2.45
09	510	7.5	220	5.6	109	3.00		2.45
10	480	7.6	210	5.7	109	4.05		2.45
11	460	0.0	205	5.8	109	(4.00)		2.45
12	470	8.0	220	6.0	109	4.10		2.42
13	450	0.2	220	6.0	109	4.08		2.45
14	440	8.4	230	5.8	109	3.90		2.45
15	425	0.6	230	5.6	109	3.80		2.50
16	400	0.6	235	5.3	109	3.50		2.55
17	410	8.5	250	4.6	113	3.20		2.55
18	---	8.35	270		120	2.50		2.55
19		8.5	280					2.65
20		8.2	280					2.55
21		8.0	295					2.50
22		7.0	300					2.50
23		7.4	305					2.45

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 11

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	14.8	295				3.2		2.75
01	14.1	290				3.3		2.85
02	12.2	260				2.9		2.85
03	9.8	250				2.9		2.80
04	0.7	260			>2.0			2.70
05	8.15	280				2.0		2.65
06	8.75	260				2.4		2.75
07	9.85	240			113	2.90	3.4	2.95
08	---	10.2	235		111	(3.45)	5.0	2.00
09	---	10.5	235		110	3.80	5.8	2.55
10	---	11.6	230		109	(4.00)	6.1	2.45
11	400	12.6	235	---	109	(4.12)	6.5	2.45
12	410	13.45	230	---	109	(4.20)	5.4	2.50
13	400	14.5	235	(6.6)	109	(4.25)	5.0	2.50
14	390	14.8	235	6.7	111	4.20	4.8	2.55
15	400	14.2	235	---	111	4.00	4.8	2.55
16	385	14.4	235	(6.6)	111	3.80	4.2	2.55
17	365	14.2	250		111	3.35	4.3	2.60
18	<340	14.1	260		117	(2.75)	3.4	2.65
19		13.6	290			3.5		2.65
20		>13.2	315			3.7		2.55
21		>13.2	330			3.2	(2.50)	
22		>13.2	325			3.1		2.55
23		>14.0	315			3.0		2.65

Time: 135.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

St. John's, Newfoundland (47.6°N, 52.7°W)

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.4		320			2.42
01			6.2		320			2.42
02			5.65		325			2.45
03			5.4		310			2.50
04			5.45		300		131	2.70
05			5.8		260		119	2.80
06			6.4		240		111	2.80
07			(510)		6.8		109	2.72
08			500		7.0		106	2.70
09			490		7.4		105	2.70
10			470		7.6		111	2.70
11			495		8.0		105	2.50
12			490		7.9		107	2.50
13			450		8.3		105	2.50
14			430		8.6		105	2.50
15			405		8.7		107	2.55
16			430		8.8		111	2.55
17			---		8.9		111	2.60
18			---		9.0		275	2.65
19			8.7		290		119	2.60
20			8.3		285			2.55
21			7.9		290			2.50
22			7.4		300			2.50
23			7.0		320			2.50

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Washington, D. C. (38.7°N, 77.1°W)

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			7.3		310			2.45
01			6.8		315			2.45
02			6.6		310			2.45
03			6.3		310			2.45
04			5.9		310			2.50
05			6.1		300		(119)	2.65
06			6.9		260		115	2.70
07			(430)		7.2		109	2.65
08			490		7.4		109	2.55
09			480		7.4		220	2.55
10			455		7.6		210	2.55
11			500		7.9		210	2.50
12			465		8.2		220	2.40
13			450		8.5		220	2.45
14			440		8.5		225	2.42
15			430		8.6		230	2.45
16			435		8.8		235	2.50
17			450		8.6		245	2.55
18			(360)		8.5		260	2.55
19			8.3		<285			2.65
20			8.1		270			2.55
21			7.9		290			2.50
22			7.7		300			2.50
23			7.4		310			2.50

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Puerto Rico, W. I. (18.5°N, 67.2°W)

May 1958

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			10.5		290			2.70
01			10.0		290			2.70
02			9.4		265			2.65
03			8.9		275			2.65
04			8.0		270			2.70
05			8.1		265			2.70
06			8.5		275			2.70
07			9.5		240		(112)	2.85
08			10.5		230		109	2.75
09			11.3		220		109	3.62
10			11.85		220		109	3.0
11			370		12.3		220	2.70
12			380		12.8		220	2.60
13			370		12.9		220	2.60
14			380		12.9		225	2.55
15			375		12.4		230	2.55
16			(390)		12.0		230	2.55
17			11.7		250		111	2.40
18			11.5		260		(117)	2.55
19			10.9		275			3.2
20			10.8		(300)			2.55

Table 13

Baguio, P. I. (16.4°N, 120.6°E)							May 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	13.0	290				2.05		
01	12.45	260				2.90		
02	10.6	245				2.65		
03	9.5	250				2.70		
04	8.2	250				2.70		
05	7.4	260			1.7	2.3		2.60
06	0.95	290	129	2.42	3.2	2.72		
07	10.4	260	119	(3.00)	6.0	2.65		
08	11.2	250	115	(3.60)	7.8	2.40		
09	12.0	240	111	3.90	7.0	2.20		
10	12.5	230	117	4.05	6.6	2.15		
11	13.0	(230)	117	4.15	5.0	2.05		
12	13.0	(230)	118	4.20	4.6	2.05		
13	13.0	230	119	4.20	4.2	2.05		
14	12.7	240	117	4.05		2.00		
15	12.9	245	117	3.02	4.6	2.05		
16	13.1	255	119	3.45	3.8	2.05		
17	13.0	270	119	2.90	3.9	2.10		
18	12.5	300	(141)	2.08	2.9	2.05		
19	(12.0)	365			2.2	(2.05)		
20	(12.0)	430				(2.05)		
21	(12.0)	410			1.9	(2.15)		
22	(12.5)	370			2.0	(2.35)		
23	12.9	320			2.7	2.60		

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Huancayo, Peru (12.0°S, 75.3°W)							May 1950	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.6	225				3.2		2.95
01	8.25	225				3.00		
02	7.65	230				3.00		
03	6.5	230				3.00		
04	5.9	235				3.00		
05	5.4	240			3.1	3.00		
06	6.15	275	---	1.40		2.82		
07	9.75	255	121	2.55	6.0	2.95		
08	12.15	240	113	3.20	7.8	2.80		
09	13.0	230	111	3.65	8.4	2.55		
10	13.0	220	---	(4.00)	9.0	2.30		
11	12.6	215	---	---	9.0	2.25		
12	12.3	210	---	---	9.0	2.15		
13	11.05	210	---	---	9.0	2.15		
14	11.9	205	---	---	8.8	2.10		
15	11.45	220	---	---	8.4	2.10		
16	11.2	245	---	(3.20)	8.0	2.10		
17	10.7	270	---	(2.50)	7.0	2.20		
18	10.4	325	---	(1.45)	3.8	2.20		
19	9.2	360				2.15		
20	8.8	340				2.25		
21	8.65	270			3.2	2.50		
22	8.55	240			3.2	2.72		
23	8.5	230			3.5	2.85		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Ft. Monmouth, New Jersey (40.4°N, 74.1°W)							April 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	7.2	310				2.35		
01	7.0	<330				2.35		
02	6.8	<330				2.45		
03	6.45	(310)				2.45		
04	6.0	(305)				2.45		
05	5.9	<310				2.55		
06	7.0	260	121	2.40		2.80		
07	8.0	240	116	2.95		2.75		
08	8.75	235	109	3.30	>3.1	2.65		
09	530	9.6	225	5.3	109	3.60		2.55
10	525	10.0	220	5.6	109	3.90		2.50
11	530	10.6	220	5.8	109	4.00		2.45
12	510	10.8	230	5.8	109	4.00		2.40
13	510	10.6	230	5.8	109	4.00		2.40
14	490	10.75	230	5.6	109	3.90		2.40
15	490	10.4	240	5.5	111	3.70		2.40
16	(485)	10.4	240	5.4	111	3.40		2.45
17	---	10.1	250	---	116	2.88		2.50
18	---	10.0	270	---	(121)	2.50		2.55
19	9.7	270				2.55		
20	9.1	265				2.55		
21	8.6	<280				2.45		
22	8.0	<295				2.45		
23	7.65	<315				2.40		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Panama Canal Zone (9.4°N, 79.9°W)							May 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			10.3	290				2.55
01			10.0	280				2.60
02			9.9	280				2.62
03			9.55	270				2.72
04			8.35	250				2.75
05			7.25	250				2.50
06			7.45	295	<199	1.85	3.4	2.58
07			8.75	260	113	2.80	4.3	2.72
08			10.25	245	109	3.38	4.9	2.62
09			11.45	235	109	3.80	5.0	2.50
10			11.95	235	111	4.10	4.7	2.38
11			12.6	230	109	4.20	4.6	2.35
12		(425)	13.0	230	110	4.30	5.0	2.35
13		440	13.0	235	---	109	4.30	4.8
14		435	13.5	(235)	7.0	111	4.20	5.0
15		420	13.4	(235)	---	109	4.00	4.8
16		410	13.0	(250)	111	3.55	4.8	2.40
17		---	12.15	260	112	3.00	3.8	2.40
18		---	11.8	<285	125	2.35	3.3	2.40
19		11.3	325				3.5	2.45
20		11.25	330				2.4	2.40
21		11.6	320				2.48	
22		11.4	295				2.60	
23		10.95	290				2.65	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Fletchers Ice I. (80.0°N, 113.0°W)*							April 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			6.8	<300	115	1.90		2.45
01			6.8	290	115	1.70		2.50
02			6.7	290	119	1.65		2.50
03			6.5	295	---	119	1.60	2.50
04			6.4	290	---	119	1.70	2.50
05			6.8	290	---	119	1.90	2.50
06			6.8	290	---	115	2.05	2.58
07			7.0	275	---	115	2.30	2.50
08		(425)	6.2	270	4.0	110	2.45	2.50
09		(440)	6.35	265	4.0	109	2.55	2.60
10		505	6.4	<260	4.3	109	2.70	2.50
11		480	6.4	250	4.5	109	2.00	2.50
12		500	6.15	(250)	4.5	109	2.90	2.38
13		520	6.0	250	4.5	109	3.00	2.30
14		525	5.7	240	4.6	109	3.00	2.30
15		500	5.9	250	4.3	109	3.00	2.30
16		570	5.6	260	4.5	109	2.90	2.22
17		650	5.3	265	4.3	109	2.80	2.20
18		550	5.95	275	4.4	109	2.70	2.30
19		450	6.6	275	4.2	109	2.60	2.30
20		(450)	5.8	290	3.9	111	2.42	2.35
21		---	6.6	290	---	115	2.15	2.30
22		---	6.6	290	---	119	2.00	2.42
23		---	6.6	290	---	119	2.00	2.42

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Puerto Rico, W. I. (18.5°N, 67.2°W)							April 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			10.3	280				2.70
01			9.95	280				2.68
02			9.4	270				2.70
03			8.8	260				2.70
04			8.35	270				2.65
05			7.75	255				2.60
06			7.9	290				2.60
07			9.85	240	(117)	2.40		2.90
08			11.8	230	109	3.20		2.85
09			12.95	220	109	3.60		2.8

Table 19

Time	April 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00	9.7	230			4.5	2.75	
01	9.55	230			4.1	2.85	
02	8.55	245			4.0	2.80	
03	8.1	250				2.85	
04	7.65	240			3.4	2.90	
05	6.95	235				3.02	
06	7.6	260		---	4.0	2.85	
07	11.2	255	121	2.70	4.6	2.95	
08	13.6	240	117	3.35	7.0	2.80	
09	15.0	230	113	(3.80)	8.4	2.55	
10	15.5	225	---	(4.00)	9.0	2.35	
11	15.2	220	---	---	9.0	2.15	
12	14.2	220	---	---	9.0	2.10	
13	14.05	215	---	---	9.0	2.10	
14	13.5	210	---	(4.00)	9.0	2.10	
15	13.5	220	---	(3.65)	8.8	2.05	
16	13.2	250	---	(3.32)	8.3	2.05	
17	12.55	265	---	(2.70)	7.5	2.05	
18	11.5	320	(157)	1.60	4.7	2.05	
19	9.65	415	---	E		2.00	
20	9.5	370				2.15	
21	9.5	285				2.42	
22	9.3	250			3.2	2.60	
23	9.5	235			4.5	2.70	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Time	March 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00	4.1	345			2.2	2.4	
01	4.1	350			2.6	2.3	
02	4.3	340			3.1	2.3	
03	3.6	340			3.0	2.4	
04	4.0	315			2.7	2.4	
05	4.2	300	---	E	3.1	2.5	
06	5.1	270	---		1.55	3.1	2.7
07	6.2	250	120	2.30	3.3	2.8	
08	(345)	7.2	245	(4.80)	115	2.65	3.6
09	390	8.1	240	5.10	110	3.00	2.8
10	340	9.0	240	5.30	110	3.20	2.7
11	340	9.6	240	5.50	110	3.30	2.7
12	315	10.5	240	5.35	110	3.30	2.7
13	320	10.7	240	5.60	110	3.25	2.7
14	(315)	11.1	240	5.25	110	3.20	2.7
15	---	10.8	240	---	110	3.00	2.7
16	---	10.4	240	---	115	2.65	2.8
17	9.8	240			125	2.30	2.8
18	9.3	240	---	1.50		2.6	
19	7.6	240	---	E		2.7	
20	6.4	260	---	---		2.6	
21	4.9	270				2.5	
22	4.5	320				2.4	
23	(4.3)	340			2.2	2.4	

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 23

Time	March 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00	6.0	320			<1.3	2.30	
01	5.5	310			<1.4	2.30	
02	5.0	330			(1.2)	2.30	
03	5.1	335			(1.3)	2.30	
04	4.6	315			<1.4	2.40	
05	4.1	300			<1.4	2.40	
06	4.9	285	130	1.80		2.70	
07	6.6	250	115	2.25		2.95	
08	8.2	240	110	2.80		2.90	
09	---	9.9	235	110	3.20	2.85	
10	335	10.8	230	---	105	3.40	2.80
11	(365)	12.2	225	---	105	3.60	2.65
12	---	12.6	230	---	105	3.70	2.70
13	---	12.6	230	---	105	3.65	2.70
14	12.4	235	105	3.55		2.70	
15	11.9	235	110	3.30		2.75	
16	11.9	240	110	3.00		2.75	
17	11.3	245	115	2.50		2.80	
18	11.0	240	125	1.95	(2.75)		
19	(10.0)	230			<1.6	---	
20	9.7	230			<1.6	---	
21	(7.6)	240			<1.6	(2.40)	
22	(6.9)	270			<1.6	2.35	
23	6.5	305			<1.6	2.25	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 20

Time	Kiruna, Sweden (67.8°N, 20.3°E) March 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00			6.0	(395)			4.0
01			(5.0)	(395)			4.8
02			6.2	(375)			4.0
03			5.5	(355)			3.5
04			5.0	(340)			2.4
05			5.2	295			2.5
06			5.8	(280)			2.6
07			6.0	285			2.6
08			6.7	(265)			2.7
09			7.3	260			2.65
10			8.8	250			2.6
11			9.6	255			2.6
12			9.2	250			2.6
13			9.6	255			2.6
14			10.0	250			2.7
15			8.6	260			2.65
16			7.2	270			2.8
17			6.6	275			2.65
18			6.0	310			2.6
19			6.0	(295)			3.8
20			5.5	340			4.3
21			6.0	350			3.8
22			(6.0)	365			5.0
23			5.6	(385)			5.0

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 22

Time	Churchill, Canada (58.8°N, 94.2°W) March 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00			6.0	310			4.8
01			6.2	300			4.4
02			5.4	320			3.6
03			5.2	320			4.4
04			4.8	330			4.4
05			4.7	360			4.1
06			4.6	360			3.8
07			5.4	320			4.3
08			5.8	290			4.1
09			6.4	280			4.0
10			(440)	6.8	280	4.6	115
11			(460)	7.2	260	4.8	115
12			410	8.2	250	5.0	120
13			400	9.4	250	5.0	120
14			400	10.0	250	4.9	120
15			400	9.4	260	4.6	120
16			(390)	7.6	270	4.2	120
17			7.2	290			2.6
18			7.0	310			2.8
19			6.0	310			4.4
20			5.7	320			3.8
21			5.8	320			5.0
22			5.6	330			4.0
23			5.9	320			4.8

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 24

Time	Schwarzenburg, Switzerland (46.8°N, 7.3°E) March 1958						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs
	(M3000)F2						
00			6.0				2.8
01			310				2.7
02			6.2				2.7
03			330				2.7
04			5.7				2.7
05			310				2.7
06			300				2.9
07			6.3				3.3
08			8.4				3.4
09			9.5				3.3
10			11.5				3.2
11			12.0				3.1
12			13.2				3.1
13			13.2				3.0
14			12.8				3.0
15			12.4				3.0
16			12.0				3.0
17			11.6				3.2
18			9.5				3.2
19			9.0				(3.4)
20			8.8				3.2
21			8.2				3.0
22			7.4				2.9
23			7.0				2.8

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 25

Grand Bahama I. (26.6°N, 70.2°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.2	270				2.72		
01	8.1	(270)				2.75		
02	7.6	265				2.70		
03	6.9	(270)				2.62		
04	6.7	<275				2.65		
05	6.75	(270)				2.60		
06	7.1	<280				2.68		
07	9.5	235	<121	(2.30)		3.05		
08	11.8	230	109	3.00		3.00		
09	13.15	220	109	3.45		2.90		
10	13.7	220	109	3.75		2.88		
11	14.15	215	109	3.95		2.70		
12	14.1	220	106	4.00		2.70		
13	14.0	225	107	(4.00)		2.70		
14	13.9	230	109	4.00		2.65		
15	13.7	230	111	(3.80)	3.8	2.65		
16	13.35	235	111	3.50	3.5	2.65		
17	12.9	240	112	2.95	3.2	2.70		
18	12.3	240	(117)	---	2.3	2.75		
19	11.5	230				2.00		
20	10.0	240				2.75		
21	9.3	260				2.70		
22	8.8	270				2.70		
23	8.5	(280)				2.70		

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 27

Chiclayo, Peru (6.8°S, 75.8°W)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	10.9	235				4.4		2.65
01	10.25	240				5.0		2.80
02	9.6	250				2.6		2.90
03	9.0	240				3.3		2.92
04	8.05	230				3.2		3.00
05	7.3	245				1.8		3.10
06	6.55	250	---	---		3.00		
07	9.9	265	127	2.50		3.00		
08	12.95	250	120	3.28		2.90		
09	14.45	<240	117	3.80		2.65		
10	14.55	230	115	4.05		2.42		
11	14.7	(230)	113	4.28		2.15		
12	>13.95	(225)	115	4.42		2.10		
13	13.35	<25	115	---		2.12		
14	>13.0	(230)	111	---		2.10		
15	13.0	<230	113	4.00	4.2	2.05		
16	>12.85	240	111	3.60	>3.6	2.05		
17	12.35	255	111	3.15	4.2	2.05		
18	11.0	280	---	2.50	5.0	2.12		
19	>11.4	350			2.5	2.12		
20	(11.15)	410				2.05		
21	(11.3)	340			2.0	2.25		
22	11.4	255			3.7	2.50		
23	11.1	230			3.8	2.62		

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: Around equinox, height scale was expanded.

Table 29

Hobart, Tasmania (42.9°S, 147.2°E)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	6.8	280				2.50		
01	5.5	300				2.45		
02	4.8	300				2.40		
03	4.2	300				2.40		
04	(4.0)	300				2.40		
05	3.7	300				2.50		
06	4.4	300	---	---		2.70		
07	5.8	250	110	2.50		2.90		
08	6.5	230	100	3.00		2.00		
09	7.0	230	100	3.35		2.75		
10	(510)	7.6	230	100	3.70	2.70		
11	(500)	8.2	220	100	3.85	2.75		
12	500	8.8	220	100	3.80	2.65		
13	470	9.2	220	100	3.85	2.65		
14	470	9.4	230	100	3.75	2.65		
15	(480)	9.0	230	100	3.65	2.65		
16	---	9.4	230	100	3.35	2.65		
17	---	>9.0	240	100	2.90	2.70		
18	9.2	250	---	---		2.00		
19	>9.0	250				2.00		
20	>7.6	260				2.65		
21	7.1	260				2.55		
22	6.8	280				2.55		
23	6.4	290				2.40		

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 26

Formosa, China (25.0°N, 121.5°E)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(N3000)F2
00			15.8	240				2.90
01			13.3	240				2.95
02			11.7	240				2.95
03			9.7	230				3.00
04			7.1	240				2.85
05			6.1	<280				2.70
06			7.8	280				2.80
07			11.7	240				3.00
08			14.1	240				3.10
09			15.2	230				2.90
10			15.6	230				2.75
11			16.1	230				2.70
12			16.6	230				2.70
13			>16.8	<240				2.65
14			17.0	<240				2.70
15			17.2	(230)				2.65
16			17.0	240				2.70
17			16.8	250				(2.70)
18			>17.0	270				2.70
19			>17.2	290				2.70
20			(17.5)	280				2.70
21			(17.4)	<260				(2.70)
22			>17.5	260				(2.90)
23			16.6	240				2.90

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 20

Canberra, Australia (35.3°S, 149.0°E)							March 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			7.7	270				2.60
01			7.2	260				2.60
02			7.0	265				2.65
03			6.6	265				2.55
04			6.5	270				2.60
05			6.2	275				2.60
06			>6.4	260				2.90
07			7.8	230				2.95
08			8.6	220				3.05
09			(440)	>9.1	210	5.3	100	3.55
10			(410)	10.6	200	5.7	100	3.75
11			(425)	11.2	200	5.8	100	4.00
12			(410)	11.3	200	6.0	100	4.00
13			(425)	11.6	210	6.0	100	4.00
14			(420)	11.8	210	5.8	95	3.90
15			---	11.0	210	---	95	3.75
16			---	10.4	215	---	95	3.40
17			10.3	225	---	100	2.90	2.85
18			(10.0)	240		110	2.10	2.95
19			>9.4	230				2.80
20			>8.5	240				(2.70)
21			>8.0	250				(2.70)
22			7.8	260				2.60
23			7.8	270				2.50

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 30

Moscow, U.S.S.R. (55.5°N, 37.3°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			335	4.0				2.40
01			340	4.0				2.40
02			330	3.9				2.40
03			310	3.9				2.45
04			300	3.5				2.50
05			290	3.4				2.55
06			275	3.6				2.65
07			260	5.8				2.90
08			245	8.4				3.00
09			240	10.4				2.95
10			235	12.0				2.90
11			230	12.5				3.10
12			235	13.1				3.00
13			235	12.9				2.85
14			235	12.8				2.90
15			235	12.6				2.05
16			230	12.3				2.50
17			225	11.0				2.85
18			220					

Table 31

Oe Bilt, Holland (52.1°N, 5.2°E)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<305	4.3				2.60		
01	<320	4.2				2.60		
02	<330	4.0				2.55		
03	<340	3.6				2.60		
04	<310	3.6				2.70		
05	<300	3.3				2.70		
06	<300	3.6				2.70		
07	240	6.2				3.10		
08	225	9.2				3.20		
09	215	11.4		120	2.4			
10	215	12.3		115	3.1			
11	215	>12.6		115	3.2			
12	215	13.0		115	3.3			
13	220	13.0		115	3.2			
14	215	13.1		115	3.1			
15	215	13.0		120	2.8			
16	210	12.2		---	2.5			
17	210	11.3				3.10		
18	210	9.0				3.10		
19	220	7.2				3.05		
20	250	6.2				2.95		
21	(280)	5.4				2.80		
22	<300	4.6				2.70		
23	(300)	4.5				2.60		

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 33

Formosa, China (25.0°N, 121.5°E)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	10.0	240				3.00		
01	9.4	230				3.10		
02	8.5	240				3.00		
03	6.9	230				3.00		
04	5.4	240				2.95		
05	4.7	(280)				2.70		
06	5.4	240				2.70		
07	10.2	260		---		3.10		
08	13.0	240		3.0	3.2	3.15		
09	>14.0	230		3.6	3.7	3.00		
10	15.2	230		3.9	4.2	2.90		
11	16.5	220		(4.1)	4.4	2.75		
12	16.6	<230		4.1	>4.4	2.70		
13	>17.0	<230		4.2	4.4	2.70		
14	---	17.0	<230	---	(4.1)	4.3	2.70	
15	---	17.2	230	---	---	4.0	2.65	
16	---	16.8	240	(3.4)	4.0	2.70		
17	16.0	<250		2.6	3.4	2.80		
18	16.2	260			2.2	2.80		
19	16.8	260			2.0	2.80		
20	>17.0	240				2.05		
21	15.8	240				2.95		
22	>14.0	240				2.90		
23	13.1	240				3.00		

Time: 120.0°E.

Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 35

Chiclayo, Peru (6.0°S, 79.8°W)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	>11.55	240			4.3	2.70		
01	10.9	240			3.4	2.80		
02	9.6	245			4.3	2.90		
03	9.1	245			3.7	2.92		
04	0.45	235			3.7	3.05		
05	7.4	230			3.2	3.10		
06	6.55	240			2.8	2.90		
07	10.0	260	119	2.40	2.8	2.90		
08	12.65	240	111	3.20	3.5	2.80		
09	14.05	230	111	3.70	4.0	2.60		
10	14.6	220	109	4.00		2.40		
11	14.4	215	111	4.20		2.20		
12	14.3	205	111	4.30		2.10		
13	13.0	205	---	110	4.25	2.10		
14	13.2	200	---	111	4.15	2.10		
15	13.35	220	---	110	4.00	2.10		
16	13.1	230	111	3.62		2.15		
17	12.65	250	110	3.20		2.20		
18	12.9	270	121	2.50	2.7	2.20		
19	>11.9	300				2.20		
20	(11.9)	370				2.20		
21	>12.15	320			1.8	(2.48)		
22	12.45	270			2.4	2.50		
23	>12.0	250			4.0	2.70		

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 32

Tokyo, Japan (35.7°N, 139.5°E)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00					6.5	275		2.75
01					5.9	275		2.70
02					5.6	290		2.65
03					5.4	295		2.65
04					5.0	300		2.55
05					5.0	310		2.60
06					5.5	280		2.80
07					9.2	240		2.30
08					12.0	230		3.15
09					13.8	230		3.15
10					14.2	230		3.35
11					14.2	225		3.95
12					14.3	230		3.85
13					14.0	230		2.80
14					13.4	235		3.65
15					13.3	240		2.75
16					12.4	245		2.90
17					11.9	250		2.85
18					11.1	245		2.5
19					9.6	240		2.2
20					8.6	240		2.85
21					7.6	255		2.80
22					7.3	260		2.80
23					6.8	270		2.75

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 34

Leopoldville, Belgian Congo (4.4°S, 15.2°E)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00			245	11.1				2.44
01			250	9.4				2.48
02			245	9.0				2.55
03			230	8.4				2.67
04			220	7.0				2.78
05			240	6.2				2.63
06			250	9.2	240	---	---	2.80
07			255	10.7	230	---	110	3.4
08			290	11.6	220	---	110	3.8
09			(340)	12.4	220	---	110	4.0
10			(390)	13.2	220	---	110	4.1
11			410	14.3	240	---	105	4.1
12			420	14.4	240	---	105	4.2
13			420	15.0	230	---	110	4.1
14			415	15.0	230	---	110	4.0
15			395	15.0	240	---	110	3.6
16			390	15.0	250	---	110	3.0
17			365	15.0	280	---	2.1	3.0
18			310	17.0				2.21
19			340	17.0				2.30
20			250	17.0				2.52
21			220	15.4				2.54
22			220	14.4				2.52
23			230	12.6				2.45

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 36

Elisabethville, Belgian Congo (11.6°S, 27.5°E)							February 1958	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00			250	8.0				1.7
01			260	7.0				1.5
02			260	6.4				1.7
03			260	5.9				2.56
04			270	6.0	---	---	---	2.54
05			250	9.0	250	---	110	3.2
06			250	10.7	230	---	110	3.9
07			265	11.5	225	---	105	3.7
08			(285)	12.0	225	---	105	3.9
09			340	12.6	220	---	105	4.1
10			350	13.0	225	---	105	4.2
11			360	13.4	220	---	105	4.1
12			375	13.5	225	---	105	4.0
13			375	13.2	230	---	110	3.9
14			370	13.1	240	---	110	3.7
15			350	12.9	250	---	110	3.1
16			310	13.2	265	---	115	3.1
17			280	13.2				2.42
18								

Table 37

Johannesburg, Union of S. Africa (26.29°S, 28.0°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00	6.6	270			3.0	2.65		
01	6.0	275			2.2	2.70		
02	5.4	<270			<2.1	2.60		
03	5.1	(230)			<1.9	2.60		
04	4.8	290			<1.8	2.55		
05	4.6	<305			<1.7	2.50		
06	6.2	270	(2.0)		2.0	2.05		
07	8.6	245	---		2.8	2.95		
08	10.1	235	---		3.4	2.90		
09	11.0	225	---		3.8	2.75		
10	11.7	220	---		4.0	4.2		
11	375	12.0	210	---		2.55		
12	(390)	12.4	205	---		4.4	2.50	
13	390	12.4	(205)	---		4.6	2.50	
14	305	12.1	225	---		4.5	2.50	
15	385	11.9	220	---		3.9	4.2	
16	(385)	11.5	235	---		3.7	4.0	
17	---	11.0	245	---		3.2	3.8	
18	---	11.0	250	---		2.6	3.0	
19	10.9	250	---		<2.0	2.3	2.75	
20	9.0	250				2.2	2.75	
21	0.0	255				2.2	2.75	
22	7.0	260			<2.1	2.75		
23	7.1	270				2.5	2.65	

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 39

Watheroo, W. Australia (30.39°S, 115.99°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00	6.8	295			3.1	2.95		
01	6.4	280			1.7	2.95		
02	6.5	295				2.90		
03	5.9	295				1.2		
04	(5.6)	300				1.5	2.80	
05	5.3	300					2.90	
06	---	6.0	280	---	120	1.80		3.10
07	---	7.1	250	---	105	2.65	3.0	3.25
08	(430)	8.5	245	4.8	100	3.25	3.6	3.20
09	400	>8.2	225	5.8	100	3.65	4.0	3.00
10	435	8.5	(220)	6.0	100	3.80	4.1	2.80
11	420	>8.5	(225)	6.0	100	3.85	3.8	(2.70)
12	450	>8.5	---	6.0	100	3.85	>4.2	2.70
13	450	>8.5	(250)	6.0	100	3.90		2.65
14	450	>8.5	(250)	6.0	100	3.90		2.60
15	425	>8.5	235	6.0	105	3.85	4.0	2.70
16	440	8.2	235	5.8	100	3.70	3.7	2.75
17	(440)	8.4	245	5.4	100	3.30	3.6	2.80
18	(360)	7.8	250	---	110	2.65	3.1	2.95
19	7.6	260	---	130	1.75	2.0	3.05	
20	6.0	270				1.6	2.95	
21	6.9	295				1.7	(2.85)	
22	(7.2)	300				3.0	2.85	
23	6.8	300				>3.3	2.90	

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 41

Canberra, Australia (35.3°S, 149.0°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00		>7.6	280			3.3	2.55	
01	7.4	275				2.2	2.55	
02	7.0	<280				1.7	2.50	
03	>6.6	280				2.2	2.55	
04	6.5	290				1.6	2.55	
05	>6.1	<290	---		120	1.35		2.55
06	---	6.8	255	---	100	2.10	2.3	2.90
07	---	7.1	230	---	100	2.85	3.2	2.90
08	(450)	7.6	210	4.8	100	3.35	3.8	2.85
09	(380)	>8.6	200	5.8	100	3.60	4.2	2.75
10	420	>8.8	200	6.0	100	3.90	4.5	2.80
11	390	>9.1	200	5.8	100	4.00	4.3	2.80
12	420	>9.2	200	6.2	100	4.10		2.70
13	400	>8.8	200	6.1	100	4.20		2.70
14	395	8.8	200	6.1	100	4.00	4.2	2.70
15	450	8.7	210	5.9	100	3.85		2.65
16	440	8.7	205	5.7	100	3.65		2.75
17	(390)	8.8	220	---	100	3.20		2.70
18	---	>8.7	240	---	105	2.55	2.9	2.75
19	8.6	250	---	110	<1.60	2.2	2.70	
20	>8.1	250				3.2	(2.55)	
21	>7.7	280				3.8	(2.55)	
22	>7.9	<290				3.4	(2.55)	
23	>7.7	275				3.4	(2.50)	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 38

Brisbane, Australia (27.5°S, 152.9°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00			8.4		285			2.6
01			7.9		280			2.2
02			7.5		290			2.55
03			7.4		280			2.55
04			7.2		300			2.55
05			7.1		300			2.60
06			7.7		260		---	2.70
07			8.8		240		120	2.30
08	(520)	10.8	230	---	120	3.45	4.2	2.05
09	(460)	11.0	220	---	120	(3.70)	>4.3	2.70
10	---	11.2	220	---	110	(3.80)		2.65
11	(440)	11.2	<230	---	---	---	>4.2	2.65
12	(400)	11.8	<250	---	110	>3.80		2.65
13	(420)	11.2	225	6.2	110	>3.50		2.60
14	(400)	11.4	<230	5.9	110	(3.90)		2.60
15	---	10.8	230	---	120	(3.70)		2.60
16	---	10.0	240	(5.0)	120	3.50		2.60
17	---	9.5	250	---	120	2.90		2.65
18	---	9.4	260		<155	<2.20	3.0	2.70
19	---	>9.0	270					2.70
20	---	>9.5	310					2.65
21	---	9.0	300					2.65
22	---	>8.5	305					2.60
23	8.5	300						2.60

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 40

Capetown, Union of S. Africa (34.1°S, 18.3°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00			5.7	(275)				2.60
01			5.2	<300				2.55
02			5.0	<300				2.55
03			4.8	<295				2.55
04			4.6	<305				2.55
05			4.2	<350				2.45
06			4.5	310			<1.6	2.60
07			7.1	260	---		2.4	2.90
08			8.7	245	---		3.1	2.85
09			10.4	240	---		3.5	2.65
10			10.8	225	---		3.8	2.55
11			(410)	11.3	225	5.2	---	2.55
12			400	11.6	(220)	6.4	---	2.50
13			400	11.9	(220)	6.2	---	2.45
14			400	11.5	(220)	6.2	---	2.45
15			390	11.5	(230)	6.1	---	2.45
16			(390)	11.2	240	---	3.9	2.50
17			10.9	245	---		3.6	2.55
18			10.4	250	---		3.1	2.65
19			10.0	255	---		2.4	2.70
20			9.6	250	---		<1.8	2.0
21			8.0	(245)	---			2.75
22			7.2	<255	---			2.1
23			6.5	(260)	---			2.2

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 42

Hobart, Tasmania (42.9°S, 147.2°E)							February 1958	
Time	h'F2	foF2	h'F	foF1	h'F2	foE	foEs	(M3000)F2
00			6.8	300				2.40
01			6.0	300				2.45
02			5.6	300				2.40
03			>4.8	300				3.2
04			4.3	310				3.0
05			4.2	310	---	1.40	3.0	2.50
06			5.2	280	---	---	2.8	2.75
07			5.6	250	---	110	2.75	2.80
08								

Table 43

Falkland Is. (51.7°S, 57.0°W)		February 1950						
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2
00							3.8	2.30
01	8.4	350						
02	8.2	335					3.1	2.30
03	7.7	330					3.4	2.35
04	7.4	350					3.0	2.35
05	7.0	355		200	---			2.30
06	480	7.5	315	---	180	1.70	1.0	2.20
07	460	8.3	255	---	120	2.45	3.0	2.30
08	520	9.8	250	---	115	3.00	3.8	2.50
09	520	10.4	250	5.4	110	3.35	4.5	2.45
10	450	11.3	245	5.6	110	3.60	4.8	2.50
11	440	12.0	250	6.3	105	3.80	5.2	2.50
12	455	12.3	235	---	105	3.90	5.4	2.50
13	400	12.4	250	6.4	110	3.80	5.5	2.60
14	400	11.6	235	6.4	110	3.80	5.0	2.65
15	390	10.1	240	5.9	110	3.70	4.6	2.60
16	400	9.4	250	---	110	3.65	4.2	2.70
17	9.2	250			110	3.10	3.4	2.70
18	9.2	250			120	2.60	3.0	2.70
19	8.9	260			140	1.90	4.1	2.75
20	8.4	285					3.6	2.55
21	8.4	300					3.6	2.40
22	8.4	310					3.4	2.30
23		0.5	340				3.9	2.30

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 45

Bunia, Belgian Congo (11.5°N, 30.2°E)		January 1950						
Time	h°F2	foF2	h°F1	foF1	h°E	foE	foEs	(M3000)F2
00	260	10.1						2.48
01	260	9.3						2.48
02	250	9.0					1.7	2.55
03	230	7.0					1.9	2.71
04	260	6.0					2.4	2.59
05	260	9.0	255	---	115	2.6	3.2	2.66
06	260	10.6	240	---	110	3.5	3.9	2.47
07	---	11.2	230	---	110	3.9	4.1	2.10
08	---	12.0	230	---	110	4.0	4.4	1.99
09	490	12.8	230	---	105	4.2	4.2	2.02
10	520	12.9	220	6.6	110	4.4		1.95
11	575	12.4	220	---	105	4.2		1.92
12	600	12.7	230	6.4	110	4.1		1.88
13	560	12.7	230	6.0	110	4.0		1.91
14	530	13.0	245	---	110	3.6	3.6	1.92
15	565	12.6	265	---	115	3.0	3.9	1.92
16	585	11.8	315	---	---	---	3.0	1.86
17	430	(12.0)					2.2	1.74
18	430	---					2.0	(1.80)
19	360	(11.8)					2.4	(2.02)
20	295	11.8					2.2	2.21
21	275	12.8					2.0	2.34
22	275	11.7					1.6	2.48
23	270	10.7						2.46

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 47

Elisabethville, Belgian Congo (11.6°S, 27.5°E)		January 1950						
Time	h°F2	foF2	h°F1	foF1	h°E	foE	foEs	(M3000)F2
00	290	0.1					1.9	2.38
01	260	7.0					2.0	2.32
02	260	6.7					1.6	2.24
03	290	5.9					2.0	2.22
04	300	6.4					2.4	2.41
05	250	8.6	250	---	110	2.9	3.9	2.53
06	260	10.0	240	---	105	3.6	4.0	2.42
07	350	10.8	230	---	100	4.0	4.9	2.30
08	425	10.8	230	---	105	4.1	4.8	2.11
09	465	11.6	225	6.6	100	4.3	4.6	2.00
10	460	12.0	225	6.4	100	4.5		2.09
11	460	11.8	225	6.4	105	4.5	5.0	2.08
12	475	11.3	230	6.0	100	4.3	4.7	2.04
13	490	11.3	230	6.0	105	4.0	4.7	2.01
14	465	11.4	230	5.6	105	3.0	4.1	2.04
15	420	10.9	250	---	105	3.2	3.8	2.10
16	370	10.9	260	---	120	2.5	3.3	2.14
17	320	(10.6)					3.2	(2.14)
18	325	---					2.5	---
19	300	10.6						2.36
20	280	9.8					2.4	2.27
21	275	10.0					2.5	2.33
22	270	9.0					2.9	2.28
23	280	8.7					2.3	2.33

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 44

San Francisco, California (37.4°N, 122.2°W)								
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2
00							4.7	260
01							4.5	260
02							4.3	260
03							4.2	270
04							3.9	<295
05							3.8	<310
06							3.8	280
07							5.3	260
08							9.3	230
09							12.6	225
10							14.0	225
11							14.15	225
12							13.95	220
13							13.4	220
14							13.4	225
15							13.0	230
16							12.4	230
17							12.0	235
18							11.35	225
19							9.55	220
20							8.2	230
21							7.0	(230)
22							5.85	(240)
23							5.0	(255)

Time: 120.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 46

Chiclayo, Peru (6.8°S, 79.0°W)								
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2
00							11.4	<310
01							11.1	300
02							10.3	270
03							9.5	250
04							8.1	235
05							6.0	240
06							6.4	270
07							10.0	270
08							12.1	260
09							12.55	250
10							13.6	230
11							14.0	220
12							13.5	220
13							12.8	215
14							(500)	210
15							(590)	12.7
16							(570)	13.0
17							(525)	<215
18							13.45	265
19							13.1	285
20							(11.6)	325
21							11.6	375
22							>11.65	350
23							>11.6	310

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 48

Townsville, Australia (19.3°S, 146.7°E)								
Time	h°F2	foF2	h°F	foF1	h°E	foE	foEs	(M3000)F2
00								3.1
01								3.1
02								3.2
03								3.0
04								3.1
05								2.6
06								---
07								---
08								---
09								---
10								---
11								---
12								---
13								---
14								---
15								---
16								---
17								---
18								---
19								---
20								---
21								---
22								---
23								---

Time: 150.0°E.

Table 49

Brisbane, Australia (27.5°S, 152.9°E)								January 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	8.0	330				2.40			
01	7.8	330				>2.5			
02	7.6	330				2.40			
03	7.5	320				2.40			
04	7.0	320				2.4			
05	6.8	320				2.45			
06	7.3	260	---		E	2.55	3.0	2.50	
07	(470)	8.0	250	5.0	120	3.30	4.1	2.45	
08	500	>8.4	<250	5.8	120	3.75	4.5	2.40	
09	400	>8.5	240	6.2	120	(3.90)	5.5	2.40	
10	460	>9.0	<240	6.5	120	4.15	5.3	2.40	
11	450	10.1	230	6.5	120	>4.00	5.0	2.40	
12	450	10.1	240	6.5	120	>3.95	5.0	2.40	
13	440	10.4	240	6.4	120	>4.00	5.2	2.45	
14	450	9.6	230	6.3	120	>3.90	4.8	2.40	
15	450	9.0	240	6.2	120	>3.80	4.8	2.40	
16	460	>8.6	250	5.8	120	(3.70)	4.8	2.40	
17	---	8.6	250	---	120	3.30	4.0	2.40	
18	---	8.4	290		130	<2.40	3.9	2.40	
19		>8.4	330				3.1	2.40	
20		8.5	350				2.45		
21		8.6	340				3.2	2.45	
22		8.7	330				2.8	2.45	
23		8.4	330				3.5	2.45	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 51

Falkland Is. (51.7°S, 57.8°W)								January 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	9.5	350				3.1	2.20		
01	9.2	350				3.1	2.15		
02	8.8	350				2.2	2.10		
03	8.5	385				2.0	2.05		
04	8.8	340	---		230	1.65	2.4	2.00	
05	555	9.6	280	---	130	2.40	2.6	2.05	
06	495	10.2	255	5.4	115	3.00	3.8	2.00	
07	500	10.5	250	5.6	105	3.40	5.3	2.10	
08	450	10.6	250	6.3	105	3.70	5.3	2.10	
09	485	10.8	245	6.3	105	3.90	5.9	2.10	
10	475	11.0	240	6.4	105	4.10	5.8	2.15	
11	455	11.3	240	6.4	100	4.20	5.4	2.20	
12	450	11.4	230	6.4	100	4.20	5.2	2.20	
13	450	10.8	245	6.4	100	4.20	5.4	2.30	
14	450	10.0	250	6.3	100	4.20	5.0	2.30	
15	450	9.3	250	6.1	105	4.00	5.0	2.30	
16	450	0.8	250	6.0	105	3.80	5.7	2.35	
17	425	0.3	250	5.8	105	3.40	6.0	2.45	
18	8.2	255			115	2.90	6.3	2.45	
19	8.0	290			120	2.10	5.4	2.35	
20	8.3	300	---			4.5	2.30		
21	8.0	355				4.0	2.20		
22	9.1	350				3.8	2.15		
23	9.2	350				3.4	2.15		

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 53

Budapest, Hungary (47.4°N, 19.2°E)								December 1957	
Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs	(M3000)F2	
00	3.40	5.2				2.74			
01	345	5.2				2.72			
02	320	5.2				2.84			
03	310	4.9				2.90			
04	300	4.5				2.95			
05	300	4.2				2.95			
06	300	4.0				2.95			
07	270	5.4	---			3.16			
08	240	9.3	210	2.4	155	2.2	3.34		
09	240	12.7	210	2.9	130	2.6	3.34		
10	240	13.8	---		125	3.0	3.38		
11	240	14.2	---		125	3.2	3.34		
12	235	14.2	---		125	3.2	3.38		
13	240	13.8	---		125	3.2	3.34		
14	250	13.6	---		130	3.0	3.26		
15	245	13.0			135	2.6	3.30		
16	250	11.8				3.26			
17	240	10.9				3.34			
18	250	9.6				3.26			
19	250	8.7				3.26			
20	260	7.0				3.19			
21	300	5.7				2.95			
22	325	5.6				2.81			
23	320	5.2				2.84			

Time: Local.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 50

Canberra, Australia (35.3°S, 149.0°E)								January 1958	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			7.4		290				3.4
01			>7.1		290				3.4
02			7.0	(320)					3.2
03			6.5	<310					2.40
04			6.3	300					2.40
05			6.0	300					2.55
06			6.5	240					2.60
07			480	7.0	215	5.0	100	3.30	2.50
09			470	>7.6	210	6.0	100	4.00	2.45
10			485	>7.7	210	6.3	100	4.15	2.35
11			470	7.7	210	6.2	100	4.25	2.40
12			450	8.6	210	6.4	100	4.25	2.45
13			475	>8.6	210	6.4	100	4.30	2.40
14			465	>8.2	215	6.3	100	4.25	2.45
15			450	8.5	210	6.0	100	4.10	2.45
16			445	8.2	210	5.8	100	3.80	2.50
17			430	>7.8	220	(5.6)	100	3.50	3.8
18			---	>7.8	240	---	100	2.90	4.0
19			7.6	280			110	1.80	3.7
20			>7.6	300					2.55
21			>7.7	(310)					3.6
22			>7.6	300					(2.40)
23			>7.7	290					3.2

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 52

Slough, England (51.5°N, 0.6°W)								December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00			5.2		305				2.35
01			4.9		310				2.35
02			4.5		305				2.50
03			4.2		300				2.45
04			3.9		290				2.40
05			3.6		290				2.50
06			3.4		250				2.45
07			(4.4)		245				2.45
08			8.1		245	165	1.85	2.5	2.85
09			>12.2		235	130	2.55	3.0	2.90
10			14.1		230	120	2.85	3.1	3.00
11			(14.8)		230	120	3.05	3.3	(2.95)
12			>14.6		235	120	3.10	3.3	(2.90)
13			>14.6		235	120	3.05	3.1	(2.85)
14			>14.6		235	120	2.85	3.1	2.80
15			14.3		240	130	2.50	2.5	2.85
16			13.0		235	150	1.90	2.1	2.85
17			11.4		215				2.80
18			9.2		215				2.75
19			>7.0		240				2.75
20			6.1		245				2.60
21			5.6		260				2.50
22			5.4		260				2.35
23			5.2		300				2.35

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 54

Rome, Italy (41.8°N, 12.5°E)								December 1957	
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs</th		

Ibadan, Nigeria (7.4°N, 3.9°E)

Table 55

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(9.0)	295				0.9	2.35	
01	(9.3)	285				1.0	(2.50)	
02	(10.1)	260					(2.65)	
03	(9.3)	250					2.80	
04	8.7	230					2.90	
05	(7.7)	220					---	
06	8.2	285	---	140	2.00	2.5	2.70	
07	>10.1	250	---	110	3.00	6.7	(2.70)	
08	11.5	240	---	105	3.60	7.0	2.40	
09	12.3	230	---	105	4.00	7.6	2.20	
10	(12.5)	220	---	105	4.20	9.7	(2.00)	
11	12.7	215	---	105	4.30	8.8	2.05	
12	13.2	215	---	105	4.30	8.7	2.05	
13	13.0	215	6.4	105	4.25	8.8	2.00	
14	>12.5	225	(6.6)	105	4.05	9.7	1.95	
15	12.1	240	(4.2)	105	3.75	8.9	1.95	
16	>11.5	255	---	105	3.30	7.0	(1.90)	
17	10.9	290	---	110	2.40	>5.6	(1.95)	
18	(10.1)	385	<200	(1.35)			(1.90)	
19	(8.5)	480	---				(1.90)	
20	(8.5)	465					(1.95)	
21	>8.4	410					---	
22	(8.4)	350					(2.25)	
23	<8.6	310					(2.25)	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 57

Brisbane, Australia (27.5°S, 152.9°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.4	320				3.0	2.40	
01	8.0	330				2.8	2.35	
02	8.0	<345				2.2	2.30	
03	7.6	<345				2.5	2.35	
04	7.5	330	---		E		2.40	
05	7.2	300	---		E		2.45	
06	(460)	7.6	250	4.4	125	2.80	3.4	2.45
07	485	8.0	250	5.4	120	3.45	4.2	2.35
08	490	8.4	240	6.0	120	>3.80	5.0	2.35
09	485	>8.5	230	6.4	120	(3.85)	5.0	2.35
10	460	>9.0	230	6.4	115	(4.10)	5.4	2.40
11	460	9.4	230	6.5	---	---	2.35	
12	465	9.6	240	6.5	---	---	2.35	
13	460	9.5	<245	6.4	110	(4.30)	2.35	
14	460	9.4	250	6.4	120	>4.20	2.35	
15	460	9.2	240	6.0	120	>4.00	4.6	2.35
16	450	8.9	250	5.8	120	(3.70)	4.4	2.40
17	---	8.5	<260	---	130	3.25	4.5	2.40
18	8.4	305			130	>2.30	4.8	2.40
19	8.4	340	---	E		3.6	2.35	
20	0.5	360				3.2	2.35	
21	8.7	360				3.0	2.40	
22	8.9	350				3.4	2.45	
23	8.9	330				3.2	2.45	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 59

Budapest, Hungary (47.4°N, 19.2°E)

November 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	foEs	(M3000)F2
00	320	6.3					2.84	
01	315	6.2					2.86	
02	310	6.0					2.90	
03	300	6.0					2.95	
04	290	5.8					3.06	
05	270	5.0					3.13	
06	285	5.0					3.04	
07	260	7.8	---	---			3.19	
08	240	11.2	220	2.5	140	2.5	3.34	
09	235	13.2	---	---	125	2.9	3.38	
10	235	13.9			120	3.1	3.38	
11	240	14.2			120	3.2	3.34	
12	240	14.2			120	3.4	3.38	
13	240	14.3			120	3.2	3.34	
14	245	13.6			125	3.1	3.30	
15	245	13.0			130	2.7	3.30	
16	250	12.4			140	2.5	3.20	
17	250	11.2					3.26	
18	250	10.0					3.26	
19	250	9.2					3.26	
20	265	8.2					3.16	
21	300	7.0					2.95	
22	300	6.6					2.95	
23	320	6.2					2.84	

Time: Local.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 56

Chimbote, Peru (9.1°S, 78.6°W)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			9.0		350			3.6 2.30
01			8.85		330			4.2 2.40
02			>9.0		310			4.4 2.50
03			8.85		<275			4.4 2.72
04			8.2		250			4.4 2.90
05			7.2		240			4.0 2.90
06			8.6		300	(121)	2.00	4.0 2.70
07			11.4		260	119	3.05	4.7 2.60
08			13.35		250	115	3.60	4.4 2.50
09			14.0		240	115	4.10	4.5 2.40
10			14.15		230	113	4.40	2.25
11			13.9		220	7.0	113	4.50 2.10
12			(13.6)		220	6.8	115	4.50 2.02
13			13.5		220	6.5	115	4.60 2.00
14			12.8		<225	6.4	113	(4.30) 2.00
15			12.5		230	6.1	112	4.15 2.00
16			12.45		245	112	3.70	6.9 2.00
17			12.0		270	119	3.25	5.8 2.00
18			11.7		300	137	2.50	4.7 2.05
19			>11.5		345			3.1 2.10
20			(11.5)		395			(2.10)
21			>11.1		375			(2.10)
22			10.4		365			2.12
23			9.2		360			4.2 2.20

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 58

Victoria, Canada (48.4°N, 123.4°W)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			5.2		250			
01			5.2		280			
02			5.2		290			
03			5.2		290			
04			5.2		290			
05			4.9		260			
06			4.6		270			
07			5.9		250			1.9
08			9.2		220			2.4
09			11.4		210			2.9
10			13.6		200			3.2
11			14.3		210			3.3
12			14.2		200			3.5
13			14.1		210			3.4
14			14.2		210			3.1
15			14.0		210			2.8
16			13.8		210			2.3
17			13.1		200			---
18			11.3		200			
19			9.5		200			
20			7.8		200			
21			6.6		220			
22			6.1		220			
23			5.6		240			

Time: 120.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 60

Chimbote, Peru (9.1°S, 78.6°W)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00			9.4		300			4.0 2.35
01			9.5		290			4.3 2.45
02			9.6		260			4.4 2.65
03			9.9		250			4.2 2.85
04			8.05		235			4.0 2.95
05			6.75		240			4.0 2.90
06			8.75		290			3.0 2.75
07			11.95		260			5.2 2.65
08			13.9		245			4.0 2.50
09			14.7		235			4.05 2.30
10			14.0		230			4.30 2.15
11			14.4		225			4.42 2.05
12			13.7		220			<113 (4.50) 2.00
13			13.05		220			<115 4.40 2.00
14			12.8		220			115 4.25 8.3 2.00
15			12.55		230			116 4.00 8.0 2.00
16			11.9		250			115 3.60 8.0 2.00
17			11.65		270			119 3.00 6.6 (2.00)
18			>11.4		310			---
19			(11.1)		305			
20			(9.3)		430			
21			(9.8)		400			2.02

Table 61

Time	November 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	(670)	(4.9)	320	(3.0)	100	(1.8)	2.25
01	---	4.5	320	---	107	1.9	2.30
02	(800)	4.5	310	3.4	109	(2.2)	2.25
03	(750)	(4.6)	290	3.6	107	(2.5)	2.20
04	750	(4.9)	270	3.9	105	(2.6)	2.10
05	610	(5.4)	260	4.2	102	(2.8)	2.25
06	540	(5.6)	245	(4.3)	101	(3.0)	2.20
07	510	6.6	210	4.8	101	(3.3)	2.25
08	505	6.8	230	5.0	101	(3.4)	2.25
09	570	6.7	230	4.9	101	(3.5)	2.20
10	615	(6.1)	230	4.9	101	(3.6)	2.15
11	545	6.2	230	5.1	101	(3.6)	2.20
12	550	6.6	215	5.0	101	(3.6)	2.20
13	620	6.3	215	5.0	101	3.5	2.15
14	610	6.1	220	5.0	101	3.4	2.15
15	550	6.4	230	4.9	101	3.4	2.20
16	535	6.4	240	4.6	101	(3.3)	2.25
17	530	7.0	250	4.5	101	3.0	2.20
18	545	6.4	260	4.2	103	2.9	2.25
19	470	6.6	275	3.9	107	2.7	2.30
20	440	6.4	300	(3.7)	109	2.4	2.30
21	(510)	6.0	310	(3.4)	109	2.2	2.25
22	(545)	5.4	315	(3.4)	100	2.0	2.25
23	---	4.8	325	(3.2)	107	2.0	2.20

Time: 165.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 63

Time	October 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	5.9	330					2.45
01	5.3	330					2.40
02	5.3	320					2.45
03	5.2	310					2.50
04	4.8	280		E	1.6		2.50
05	4.7	270		E	<1.4		2.50
06	6.7	255			1.8		2.80
07	9.5	245			2.4	2.5	2.90
08	11.8	240			2.8	3.1	2.90
09	280	13.7	240		3.1	3.6	2.85
10	260	14.1	235	5.40	3.3	3.6	2.80
11	330	14.2	240	5.90	3.4	3.6	2.75
12	310	14.1	230	5.85	3.4	3.5	2.70
13	370	14.0	240	6.45	3.3		2.70
14	320	14.0	240	6.40	3.0		2.70
15	280	13.8	240		2.6	2.6	2.70
16	310	13.2	240		2.0	2.3	2.70
17	310	12.2	240		1.3	2.0	2.70
18	11.1	240		E	<1.8		2.75
19	9.5	240		E	2.2		2.70
20	8.3	250		E	<1.7		2.70
21	7.3	270			<1.5		2.50
22	6.5	290					2.45
23	6.2	305					2.40

Time: 30.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 65

Time	September 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	(5.25)	370				4.0	----
01	(4.6)	365				3.8	(2.52)
02	4.05	390				3.7	(2.40)
03	4.2	390				4.3	2.55
04	(4.6)	<400				3.8	2.48
05	4.55	340		----	----	3.9	2.62
06	5.8	280		----	----		2.88
07	6.3	265		113	2.65		2.95
08	7.4	245		----	<120	3.00	2.92
09	7.45	250		----	119	3.32	2.80
10	(500)	0.1	240	----	<115	3.40	2.70
11	(620)	0.5	235	----	111	(3.50)	2.65
12	(585)	0.8	240	4.7	111	3.50	2.70
13	(550)	8.65	240	4.4	111	3.45	2.68
14	(535)	8.3	240	4.6	111	3.30	2.65
15	(415)	8.6	250	----	115	3.05	2.70
16	---	8.3	265	4.4	119	2.98	2.68
17	---	6.8	280	----	121	2.58	2.75
18	7.45	305		129	2.60	3.0	2.75
19	(6.35)	325				3.0	(2.65)
20	(5.9)	320				4.2	----
21	(5.3)	330				4.3	(2.35)
22	(5.5)	330				4.6	(2.42)
23	(5.6)	335				4.0	----

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 62

Time	November 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	540	5.1	300	3.6	(110)	2.4	2.50
01	(630)	5.0	300	3.7	115	2.4	2.60
02	>520	5.1	290	3.9	110	2.6	2.40
03	590	5.3	280	4.0	105	2.7	2.50
04	548	5.7	280	4.0	100	2.8	2.40
05	500	6.3	280	4.2	100	2.9	2.40
06	520	6.0	270	4.4	100	(3.0)	2.50
07	490	6.6	250	4.6	100	3.1	2.50
08	540	6.4	250	4.7	100	3.3	2.50
09	>550	6.2	240	4.9	100	3.4	2.45
10	550	6.2	240	5.0	100	3.4	2.40
11	540	6.6	240	5.2	100	3.5	2.40
12	540	6.8	240	5.0	100	3.5	2.40
13	540	7.0	250	5.0	100	3.4	2.40
14	530	6.8	240	4.9	100	3.4	2.40
15	530	6.9	250	4.9	100	3.3	2.40
16	540	6.6	250	4.7	100	3.2	2.40
17	500	7.0	260	4.7	100	3.2	2.50
18	540	7.0	260	4.4	100	3.0	2.40
19	470	7.0	260	4.2	100	2.9	2.45
20	490	6.3	280	4.2	100	2.7	2.45
21	520	6.0	290	4.0	105	2.6	2.50
22	540	5.9	290	3.9	110	2.5	2.70
23	540	5.5	290	3.8	110	2.5	2.40

Time: 165.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 63

Time	October 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	5.9	330					2.45
01	5.3	330					2.40
02	5.3	320					2.45
03	5.2	310					2.50
04	4.8	280		E	1.6		2.50
05	4.7	270		E	<1.4		2.50
06	6.7	255			1.8		2.80
07	9.5	245			2.4	2.5	2.90
08	11.8	240			2.8	3.1	2.90
09	280	13.7	240		3.1	3.6	2.85
10	260	14.1	235	5.40	3.3	3.6	2.80
11	330	14.2	240	5.90	3.4	3.6	2.75
12	310	14.1	230	5.85	3.4	3.5	2.70
13	370	14.0	240	6.45	3.3		2.70
14	320	14.0	240	6.40	3.0		2.70
15	280	13.8	240		2.6		2.70
16	310	13.2	240		2.0		2.70
17	310	12.2	240		1.3		2.70
18	11.1	240		E	<1.8		2.75
19	9.5	240		E	2.2		2.70
20	8.3	250		E	<1.7		2.70
21	7.3	270			2.50		2.50
22	6.5	290			2.45		2.75
23	6.2	305			2.40		2.65

Time: 30.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 65

Time	September 1957						
	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	5.7	315					2.45
01	5.0	320					2.50
02	4.6	320					2.45
03	4.6	300					2.50
04	4.2	305					2.50
05	330	4.8	300	3.3		1.6	<2.0
06	320	6.1	260	4.0		2.3	2.90
07	430	7.4	250	4.2		2.6	3.1
08	420	8.2	250	4.9		3.1	3.5
09	370	9.0	240	5.0		3.3	3.6
10	370	9.6	240	4.8		3.5	3.7
11	370	9.6	240	5.2		3.6	3.9
12	370	10.0	240	5.5		3.5	3.7
13	360	9.8	240	5.4		3.5	3.8
14	340	9.4	240	5.2		3.3	3.4
15	335	9.2	250	5.1		3.1	3.7
16	315	8.8	250	4.2		2.8	2.9
17	335	8.4	260	----		2.3	2.4
18	19	7.2	2				

Table 67
Paramaribo, Surinam (5.8°N, 55.2°W)

Time	September 1957							
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	17.0			3.2	2.55		
01	270	17.0			3.2	2.60		
02	260	16.7			3.2	2.70		
03	255	16.0			3.0	2.60		
04	240	14.0			3.0	3.00		
05	220	11.0			3.0	2.95		
06	230	9.0			2.4	2.85		
07	250	8.7			2.6	2.60		
08	240	7.3			3.0	2.75		
09	250	6.8			3.0	2.65		
10	245	9.6			2.4	4.2	3.00	
11	230	11.5	---	---	100	3.3	4.3	2.95
12	(220)	13.2	230	---	100	3.8		2.85
13	---	13.8	220	---	100	4.1		2.80
14	(310)	14.0	220	---	100	4.4		2.70
15	(305)	13.9	230	---	105	4.5		2.65
16	400	14.2	240	7.2	100	4.5		2.45
17	390	14.8	230	7.0	100	4.4		2.50
18	390	14.0	225	7.0	100	4.2	5.0	2.50
19	405	13.5	230	6.6	100	3.8	5.1	2.45
20	---	13.0	235	---	100	3.3	4.8	2.40
21	(200)	12.8	265	---	100	2.5	4.7	2.45
22	310	13.0				4.3		2.40
23	345	14.0				4.2		2.40

Time: 0.0°.

Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 69
Bombay, India (19.0°N, 73.0°E)

Time	June 1957							
	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	8.0				3.10		
07	320	8.9				3.00		
08	380	10.0				2.70		
09	420	10.5				2.55		
10	440	>11.3				2.50		
11	470	12.0				2.35		
12	480	12.6				2.30		
13	500	>13.0				2.25		
14	(500)	>13.5				(2.25)		
15	---	>13.7				---		
16	---	>13.7				---		
17	(500)	(12.9)				(2.25)		
18	480	12.1				2.30		
19	440	11.6				2.50		
20	---	---				---		
21	370	9.8				2.75		
22	360	9.3				2.60		
23								

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 71
Moscow, U.S.S.R. (55.5°N, 37.3°E)

Time	February 1957							
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.9					2.50	
01	320	3.7					2.55	
02	320	3.7					2.50	
03	310	3.5			---		2.52	
04	290	3.3			---		2.32	
05	280	2.9			---		2.61	
06	280	3.2			---	(1.3)	2.72	
07	260	5.7			120	1.7	2.99	
08	250	8.4			120	2.3	3.04	
09	240	10.1			120	2.6	3.03	
10	240	11.4			120	3.0	2.98	
11	240	12.9			120	3.0	2.99	
12	230	13.0			120	3.0	2.94	
13	240	13.2			120	3.0	2.94	
14	240	12.8			120	2.8	2.96	
15	230	12.3			120	2.5	2.97	
16	230	11.4			130	2.0	3.00	
17	230	10.6			130	1.4	3.04	
18	220	8.7			---	E	3.00	
19	230	6.8			---	---	2.95	
20	250	5.5					2.81	
21	260	4.5					2.64	
22	300	4.3					2.56	
23	300	4.0					2.51	

Time: 30.0°E.

Sweep: 0.5 Mc to 20.0 Mc in 10 to 30 seconds.

Table 68
Delhi, India (28.6°N, 77.1°E)

Time	June 1957							
	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		440	9.0					2.50
01		400	8.8					2.60
02		(300)	(8.2)					(2.70)
03								
04		400	7.8					2.60
05		380	8.0					2.70
06		360	8.9					2.60
07		320	9.3					2.50
08		440	11.9					2.50
09		440	12.2					2.50
10		440	12.5					2.50
11		420	12.8					2.55
12		400	10.0					2.50
13		440	11.1					2.45
14		440	11.9					2.50
15		440	12.2					2.50
16		420	12.8					2.55
17		400	10.8					2.50
18		380	11.5					2.70
19		370	10.8					2.75
20		400	9.4					2.60
21		440	9.2					2.50
22		420	9.1					2.50
23		440	8.9					2.50

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 70
Tiruchy, India (10.8°N, 78.8°E)

Time	June 1957							
	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(440)	(10.2)					(2.60)
01		(420)	(9.3)					(2.55)
02		(400)	(9.0)					(2.60)
03		(360)	(8.2)					(2.80)
04		360	7.8					2.80
05		320	7.1					3.00
06		360	9.3					2.00
07		400	11.5					2.60
08		440	12.0					2.50
09		520	12.0					2.20
10		560	12.0					2.10
11		560	11.9					2.10
12		560	11.7					2.10
13		600	11.7					2.00
14		600	11.7					2.00
15		600	11.7					2.05
16		560	11.6					2.10
17		560	11.5					2.10
18		520	11.1					2.20
19		560	11.3					2.10
20		560	10.3					(2.10)
21		560	9.8					2.10
22		520	9.7					2.25
23		460	10.0					2.50

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

*Height at 0.83 foF2.

Table 72
Hariotonga I. (21.2°S, 159.8°W)

Time	February 1957							
	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	---					1.8	---
01	(260)	(9.6)					2.5	(2.60)
02	<290	---						
03	(200)	---						
04	290	---						
05	(290)	(8.4)	---	---	---	---	2.3	(2.55)
06	300	(8.8)	---	---	---	---	2.8	(2.60)
07	250	(10.8)	---	---	104	3.2	2.85	
08	250	12.4	245	---	108	3.6	3.8	2.75
09	260	13.0	225	---	104	(4.0)		2.70
10	340	13.5	220	---	104	(4.1)		2.60
11	360	14.2	220	6.5	102	(4.1)		2.60
12	360	15.2	210	7.0	105	(4.2)		2.60
13	360	15.1	220	7.3	104	4.1		2.60
14	370	14.8	220	7.2	105	(4.2)		2.60
15	380	13.4	230	7.0	105	(4.0)		2.55
16	380	13.5	250	6.8	110	(3.6)	4.0	2.50
17	360	12.8	250	---	110	(3.2)	3.7	2.60
18	340	(12.4)	270	---	---	---	3.7	(2.60)
19	300	(12.2)	---	---	---	---	3.0	(2.60)
20	320	(10.2)	---	---	---	---	3.1	(2.50)
21	<330	---	---	---	---	---	1.7	

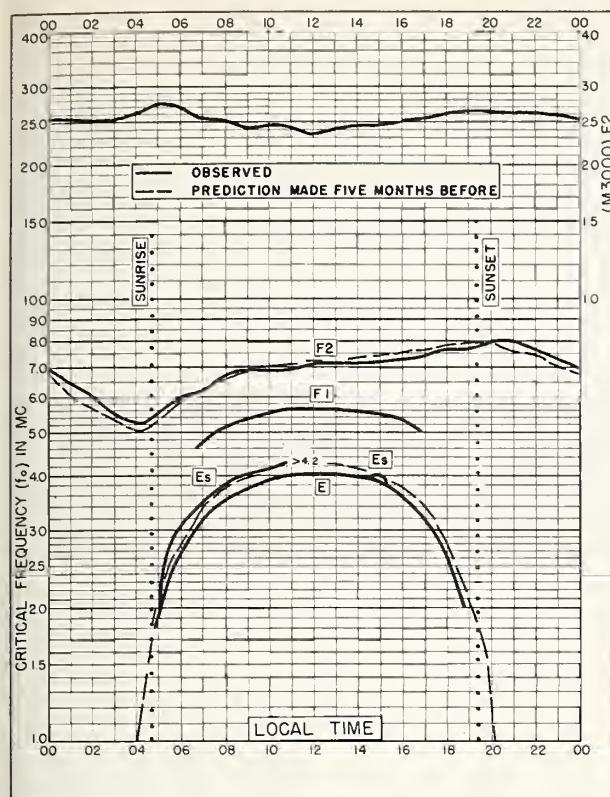


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W JUNE 1958

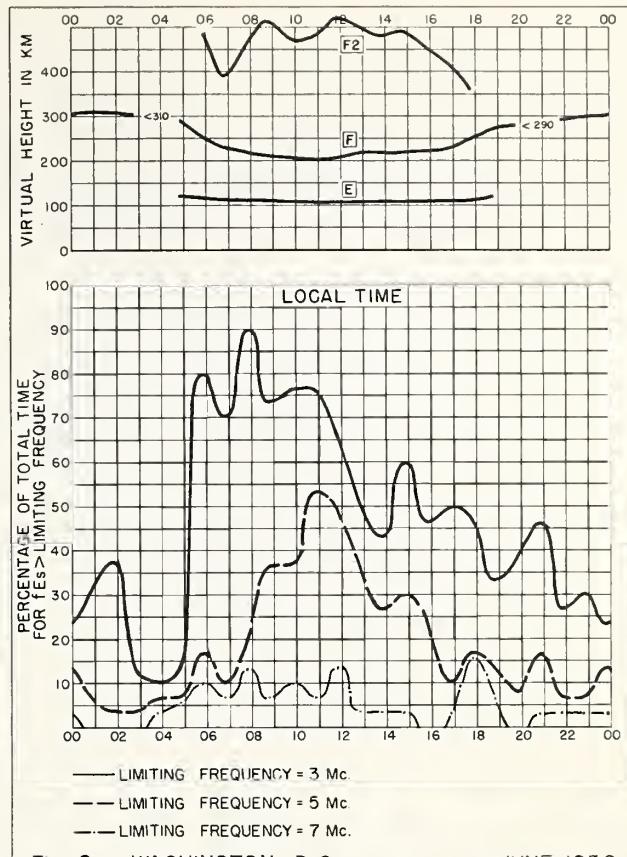


Fig. 2. WASHINGTON, D.C. JUNE 1958

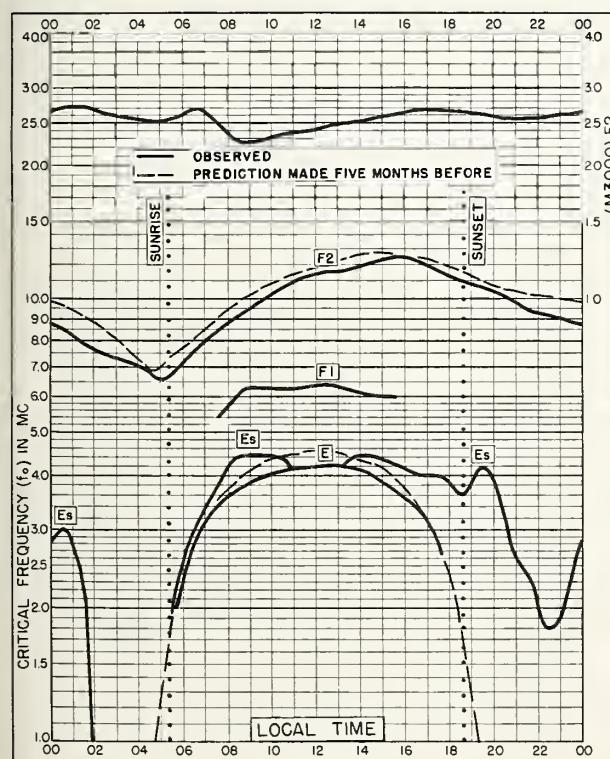


Fig. 3. MAUI, HAWAII
20.8°N, 156.5°W JUNE 1958

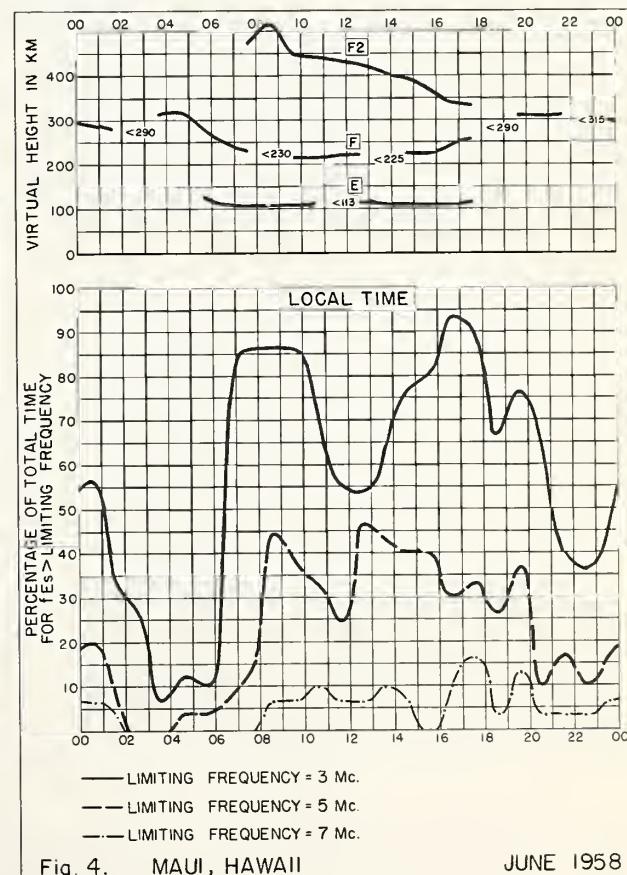
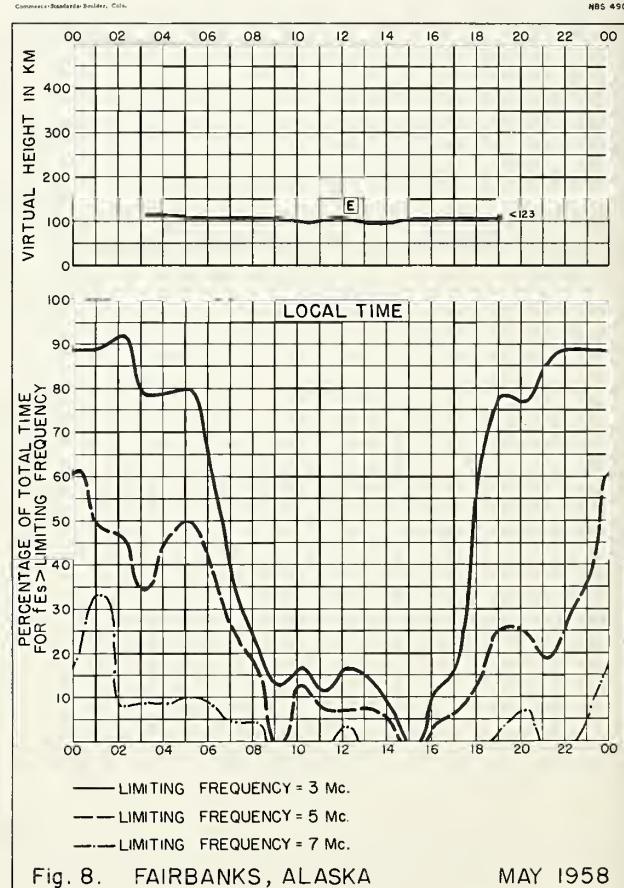
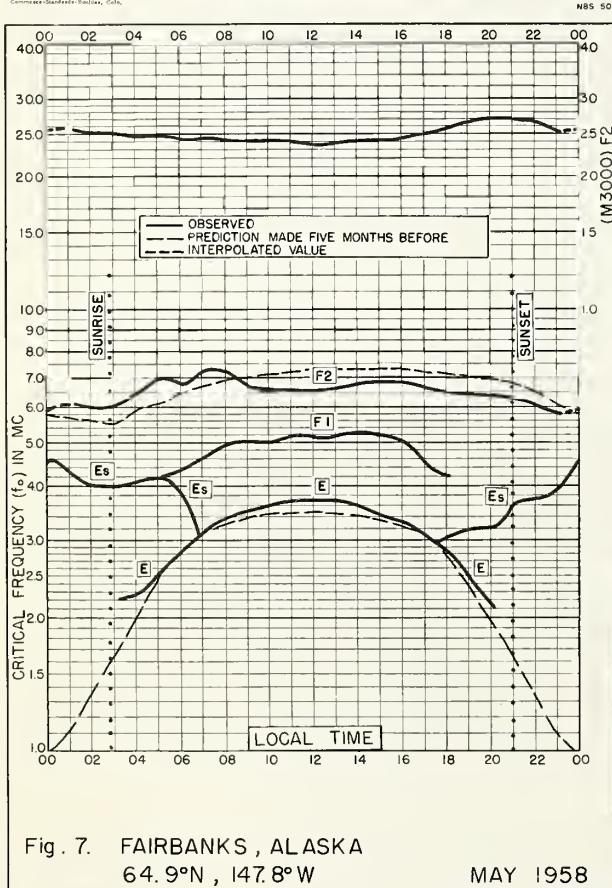
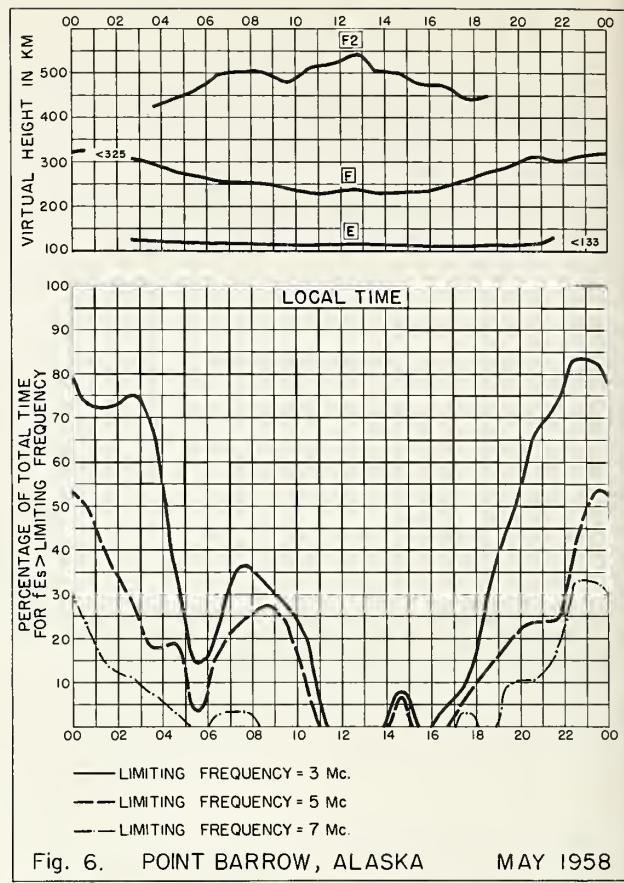
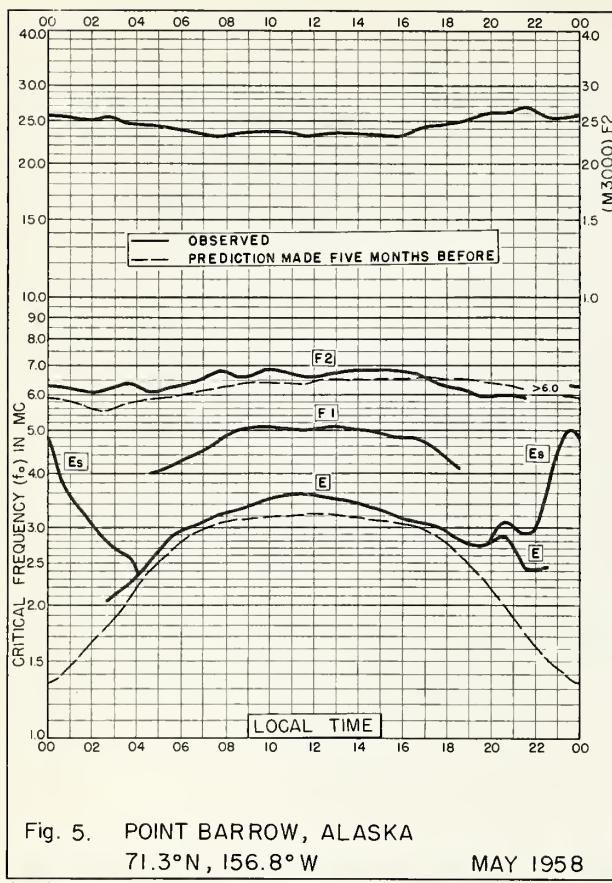
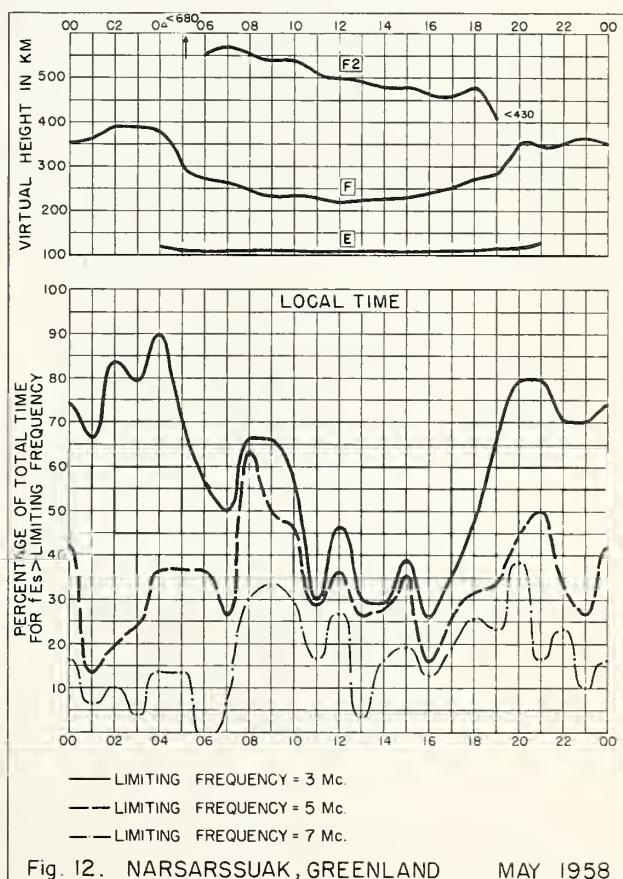
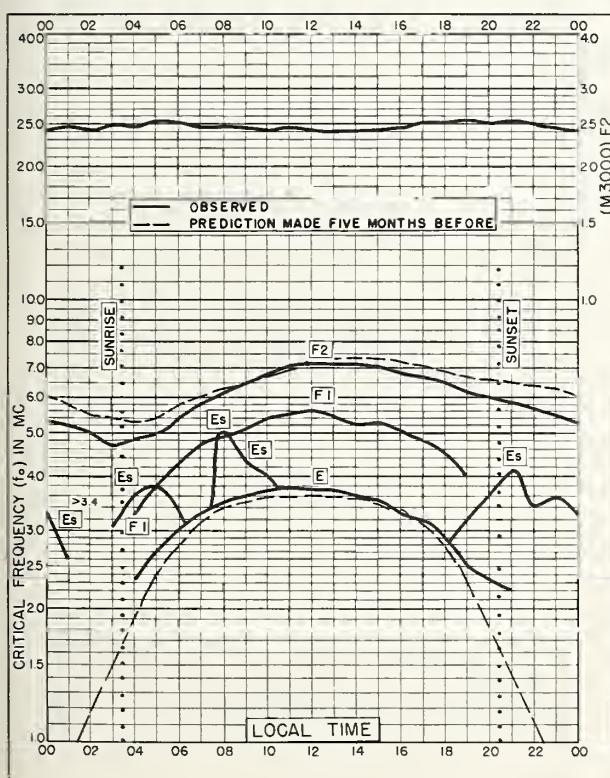
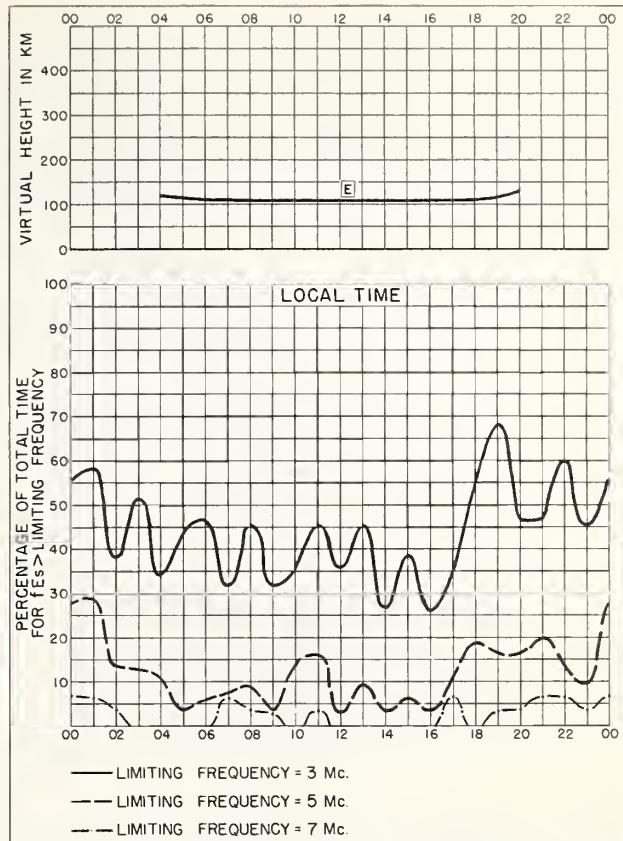
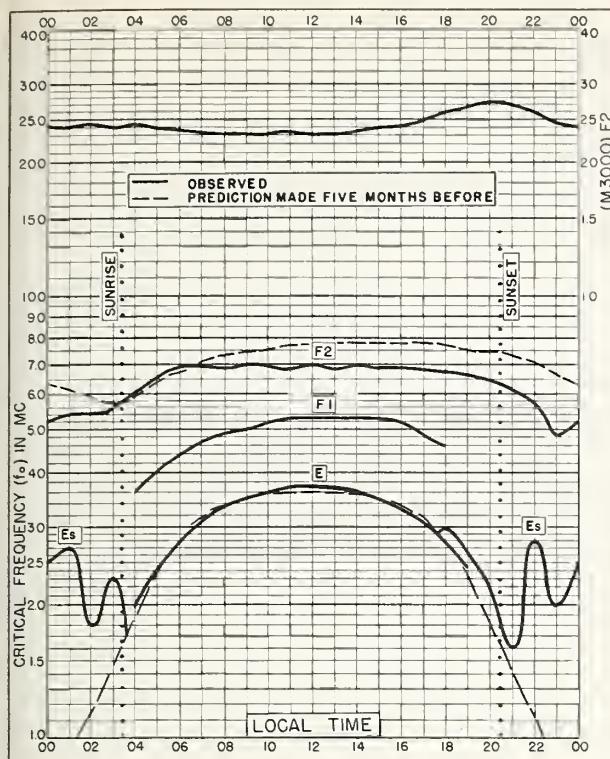


Fig. 4. MAUI, HAWAII JUNE 1958





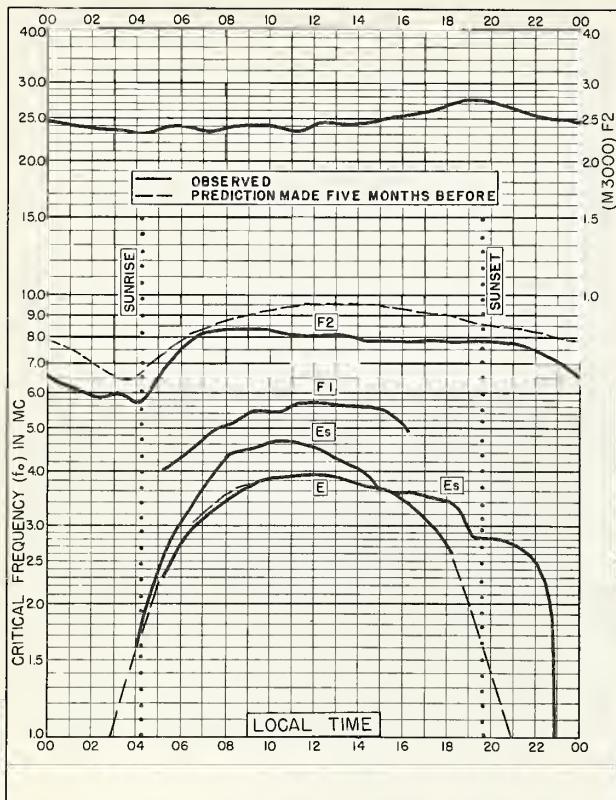


Fig. 13. ADAK, ALASKA
51.9°N, 176.6°W MAY 1958

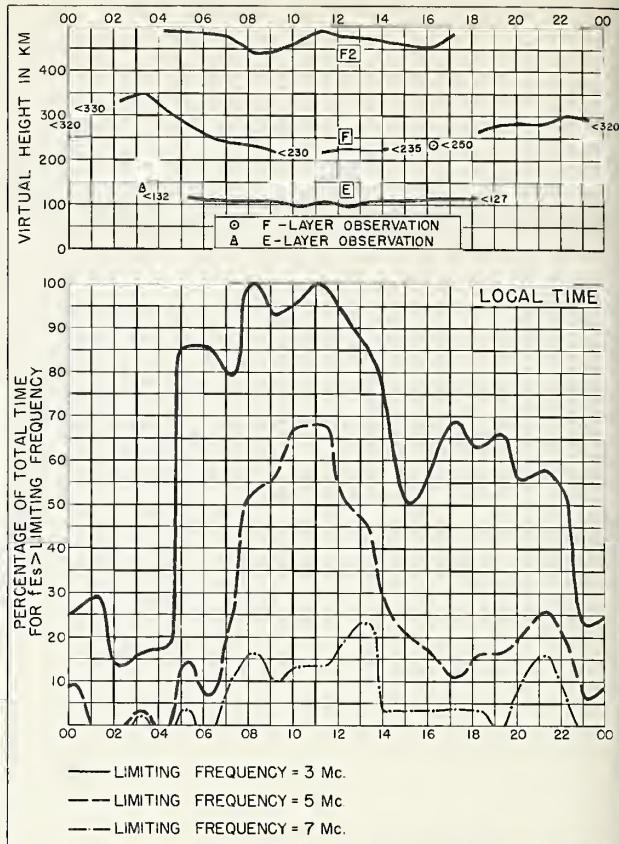


Fig. 14. ADAK, ALASKA MAY 1958

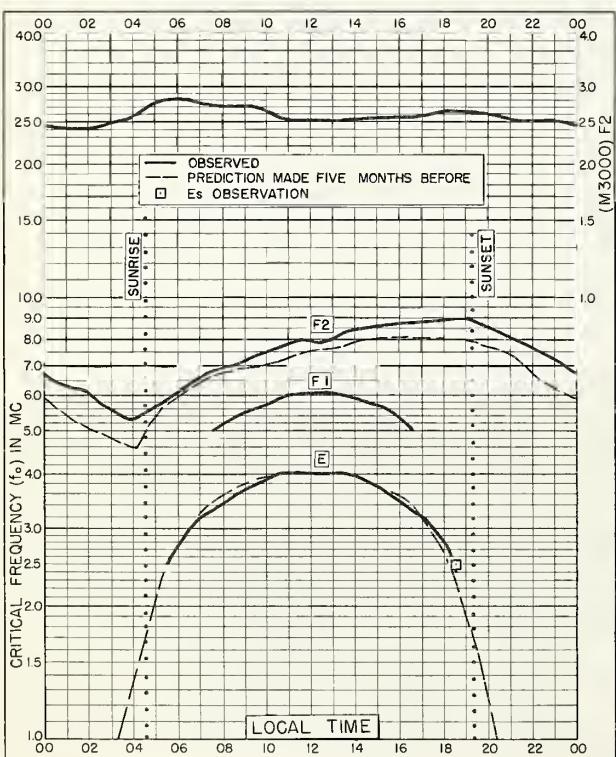


Fig. 15. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W MAY 1958

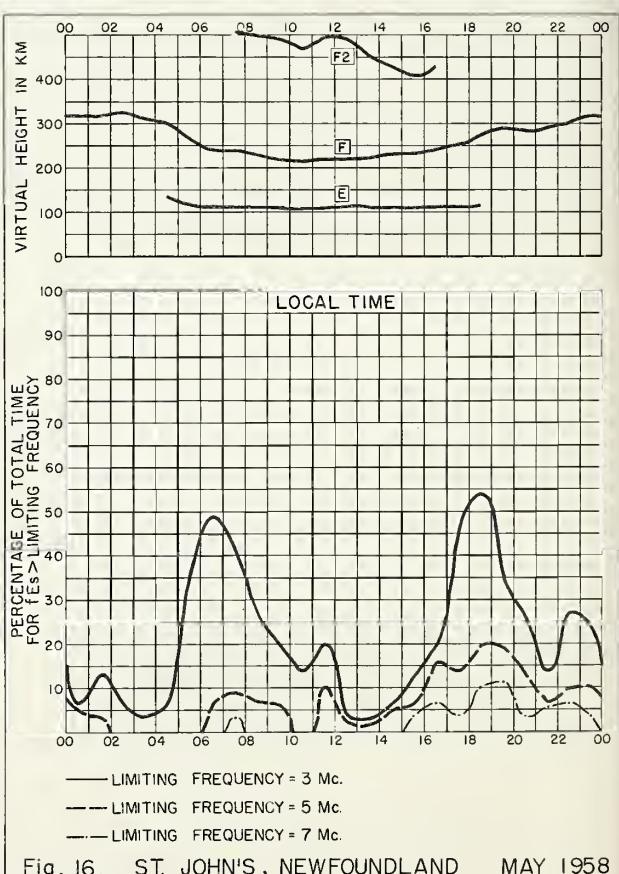


Fig. 16. ST. JOHN'S, NEWFOUNDLAND MAY 1958

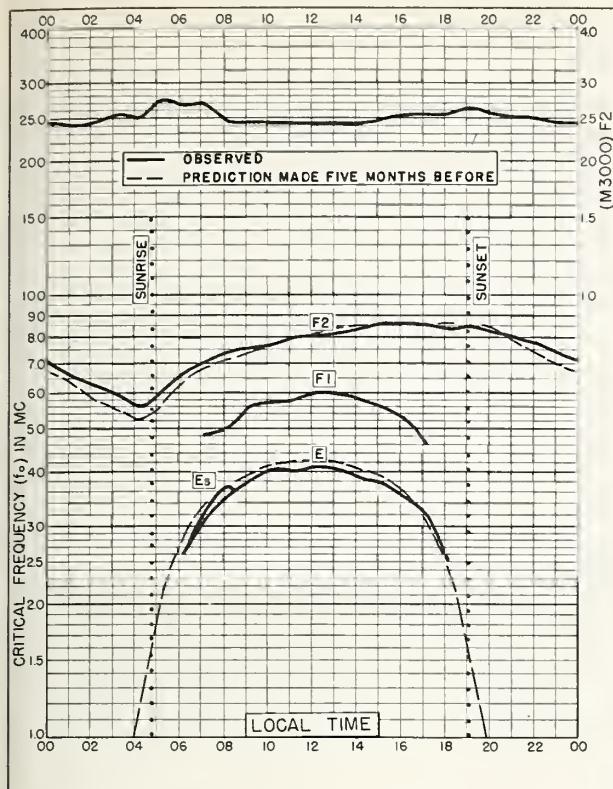


Fig. 17. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W MAY 1958

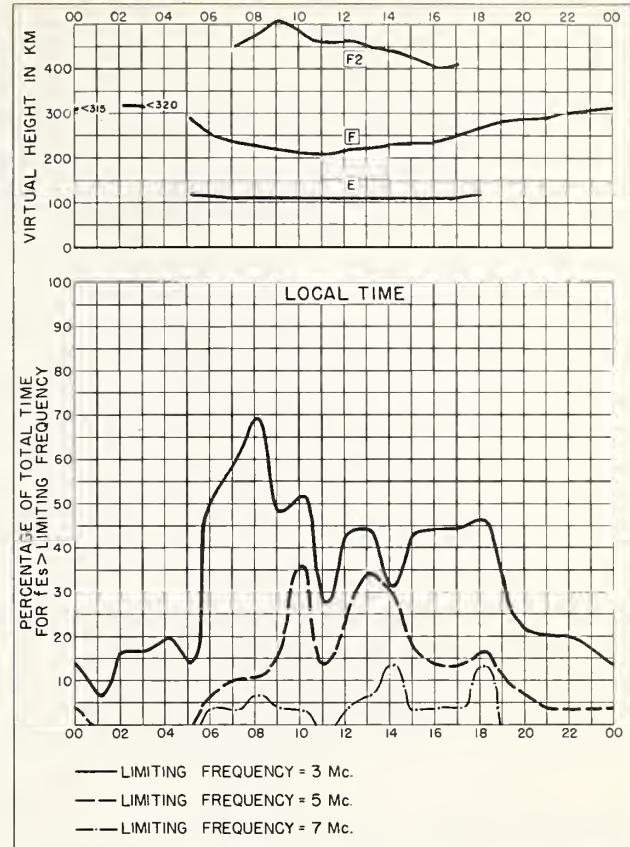


Fig. 18. FT. MONMOUTH, NEW JERSEY MAY 1958

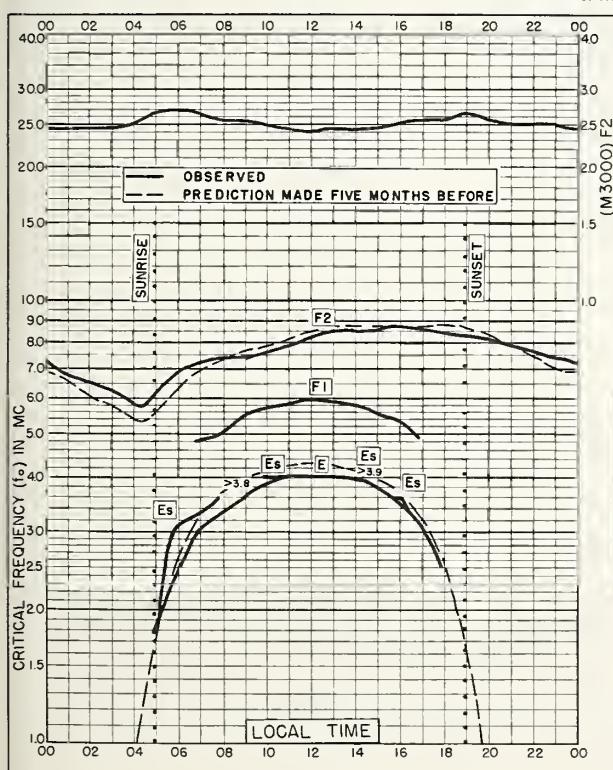


Fig. 19. WASHINGTON, D.C.
38.7°N, 77.1°W MAY 1958

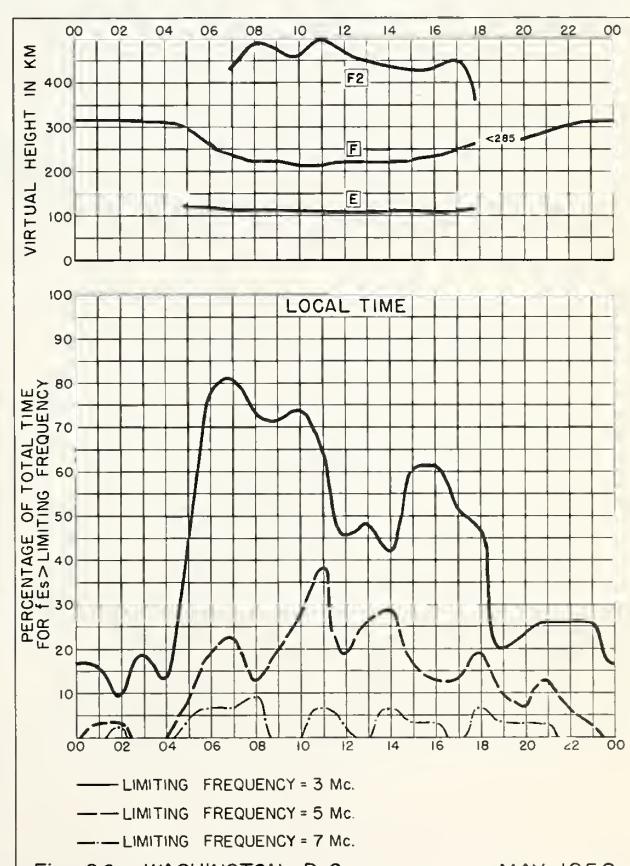
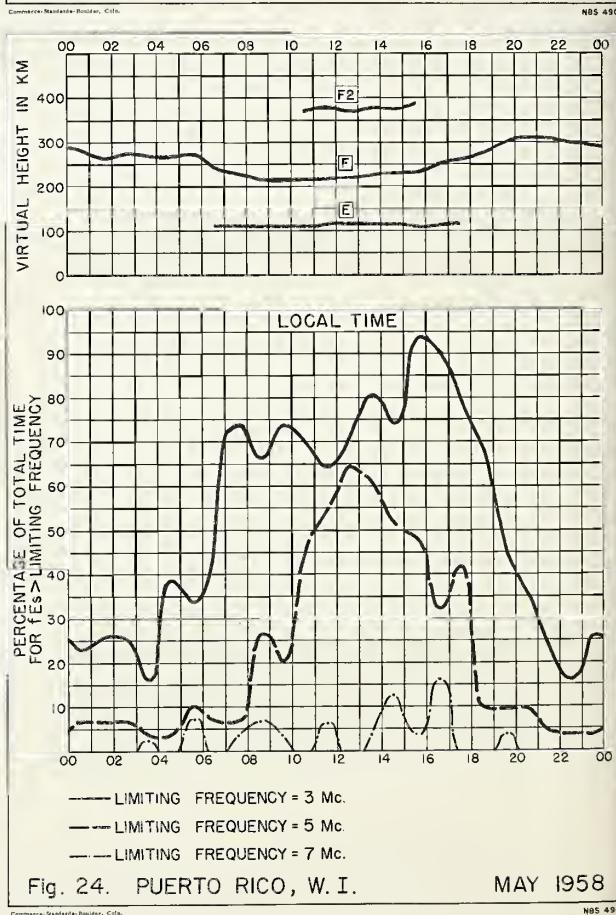
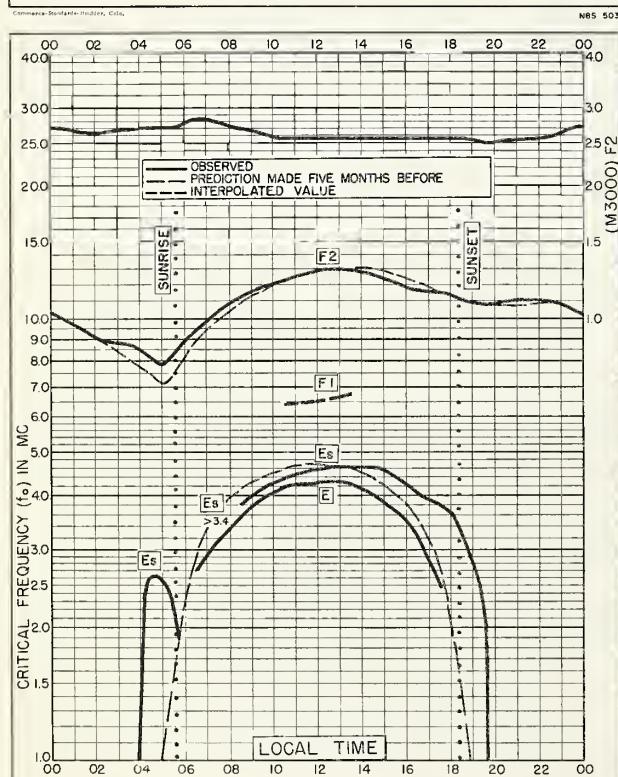
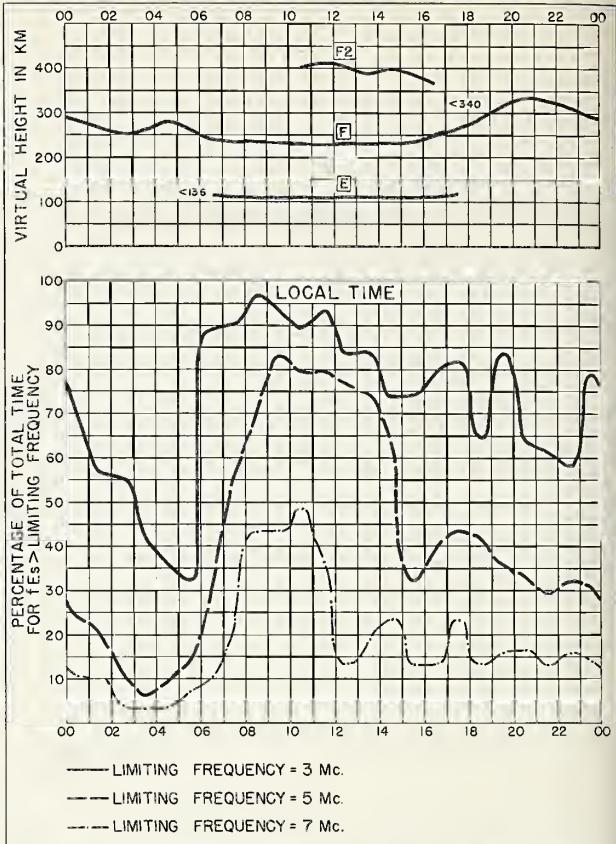
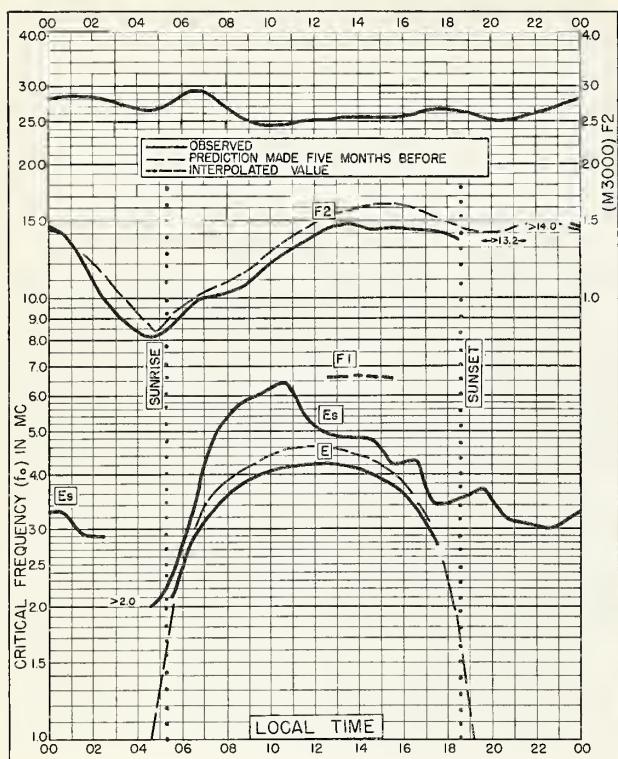


Fig. 20. WASHINGTON, D.C. MAY 1958



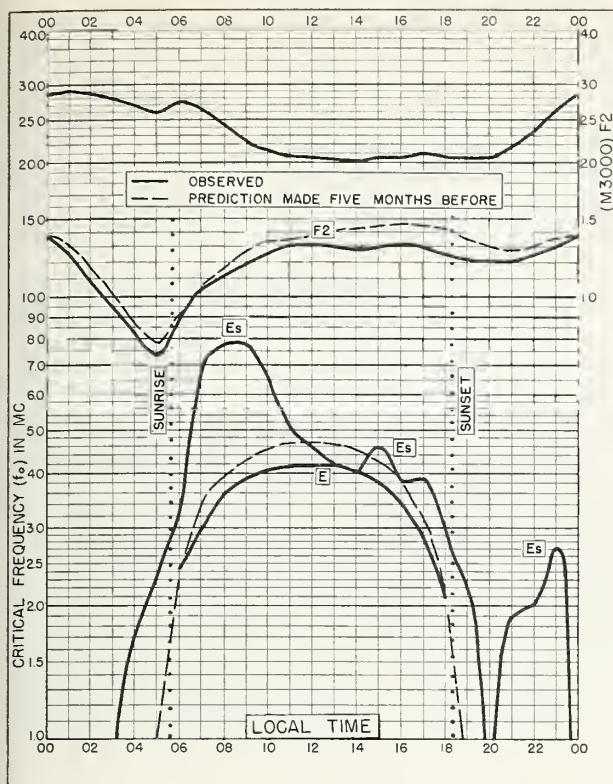


Fig. 25. BAGUIO, P. I.
16.4°N, 120.6°E

MAY 1958

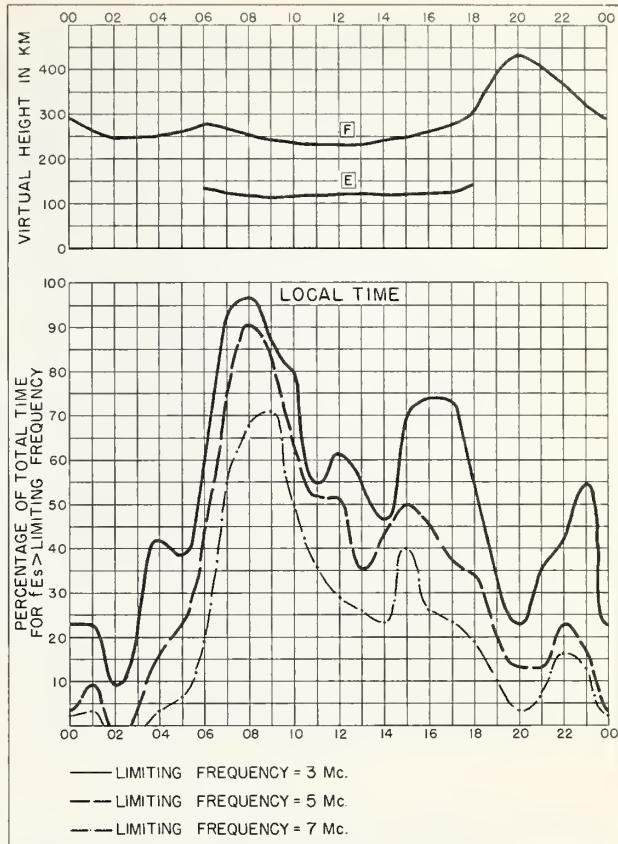


Fig. 26. BAGUIO, P. I.

MAY 1958

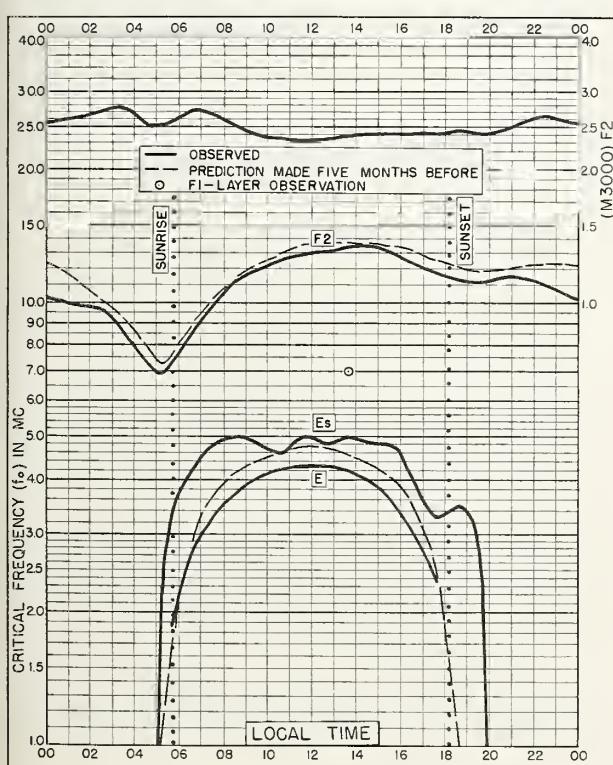


Fig. 27. PANAMA CANAL ZONE
9.4°N, 79.9°W

MAY 1958

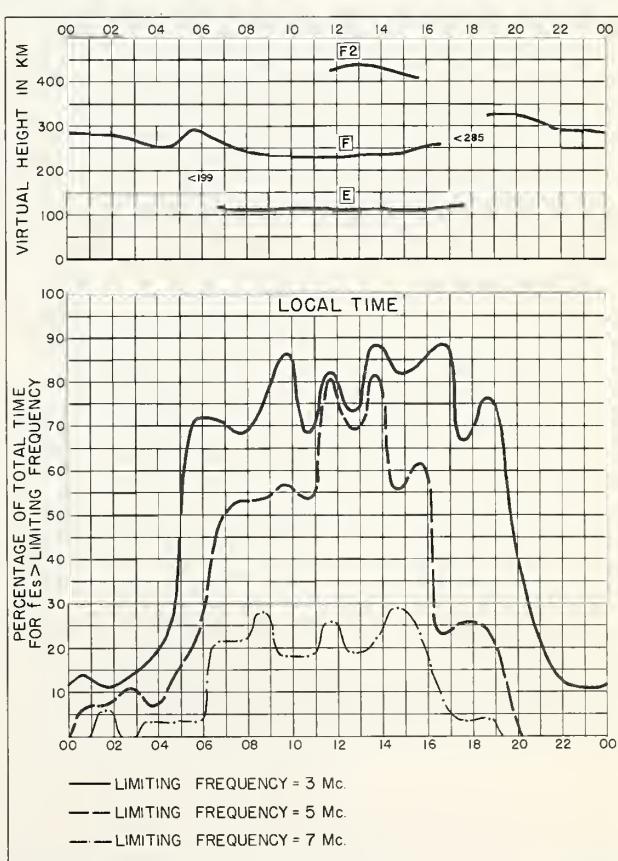
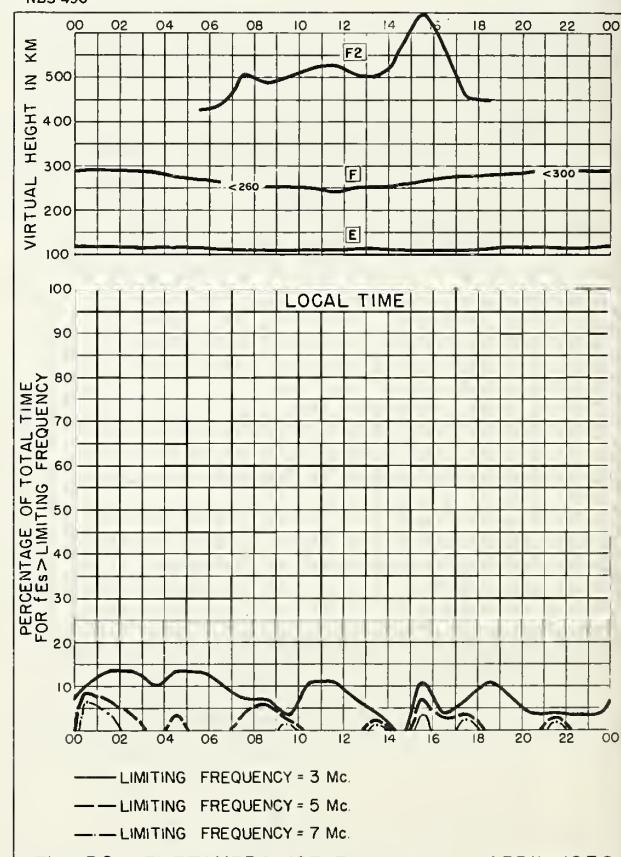
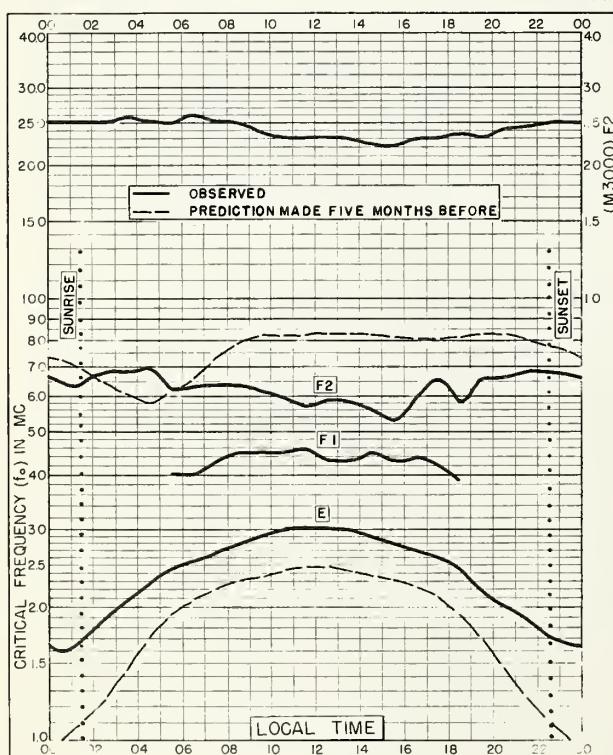
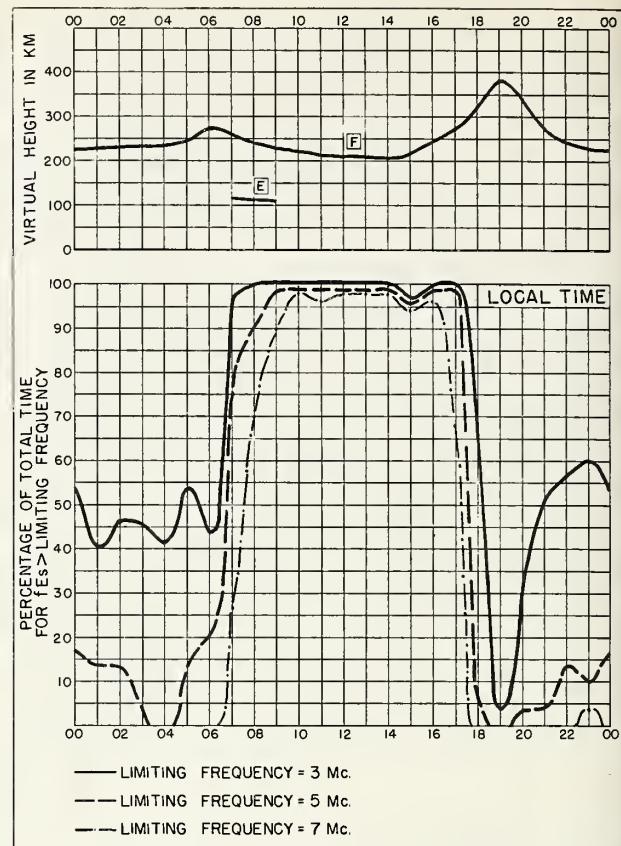
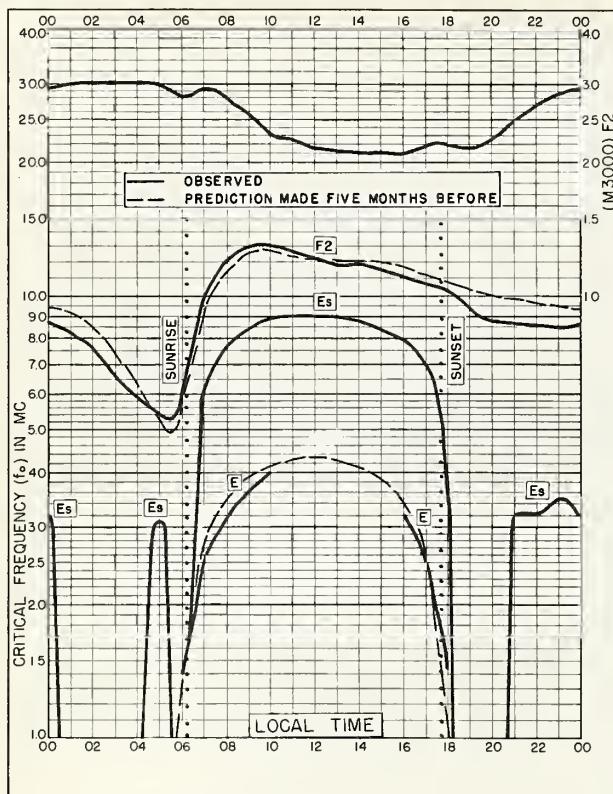


Fig. 28. PANAMA CANAL ZONE

MAY 1958



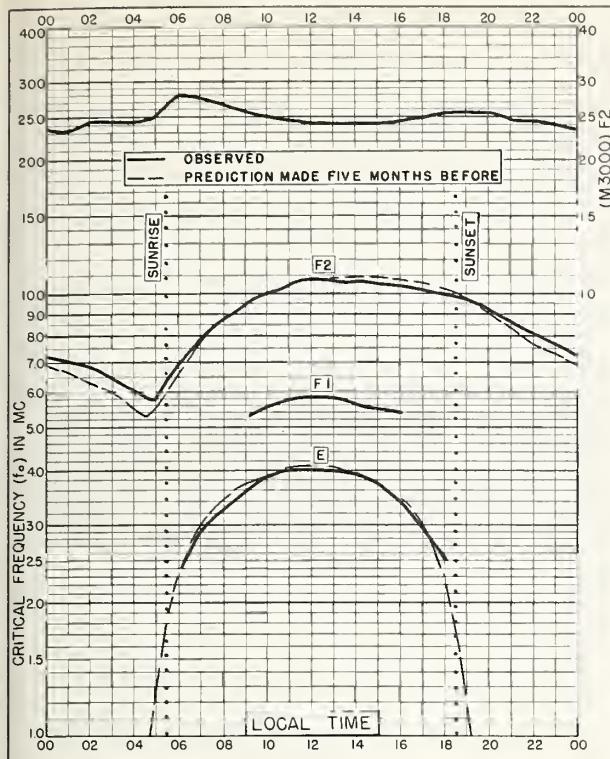


Fig. 33. FT. MONMOUTH, NEW JERSEY
40.4°N, 74.1°W APRIL 1958

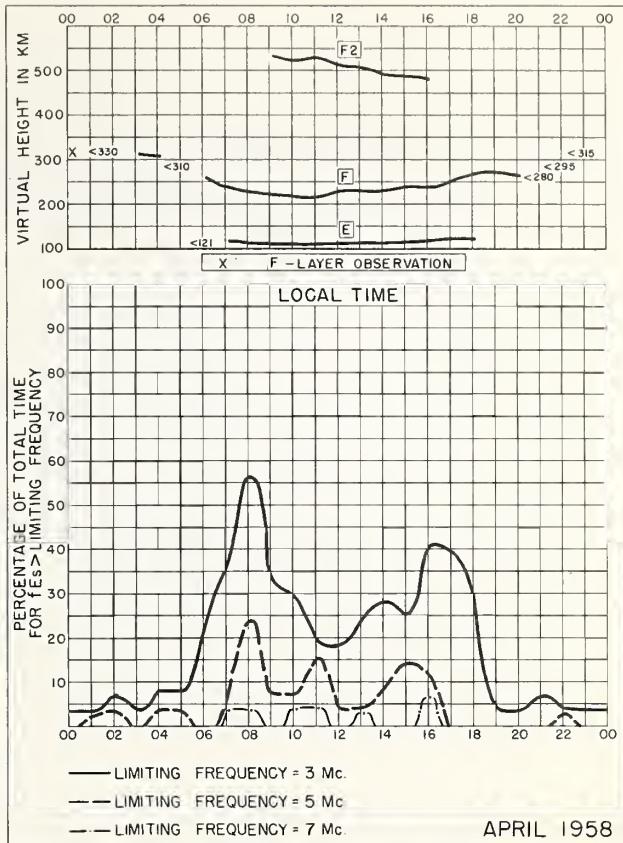


Fig. 34. FT. MONMOUTH, NEW JERSEY APRIL 1958

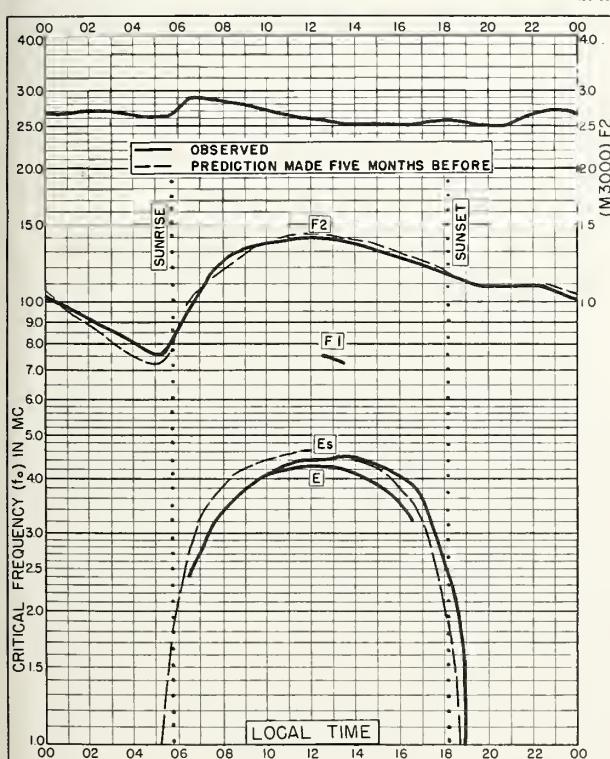


Fig. 35. PUERTO RICO, W. I.
18.5°N, 67.2°W APRIL 1958

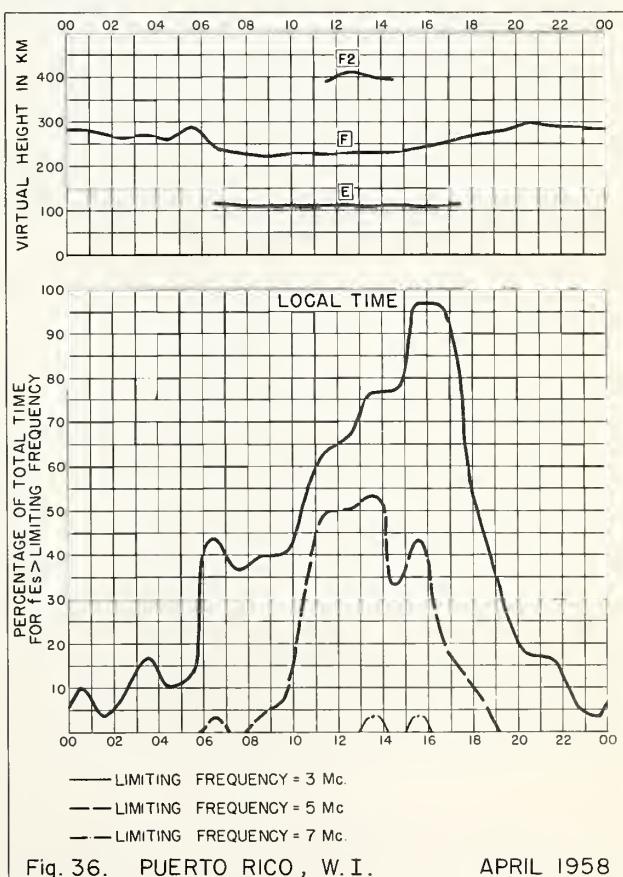


Fig. 36. PUERTO RICO, W. I. APRIL 1958

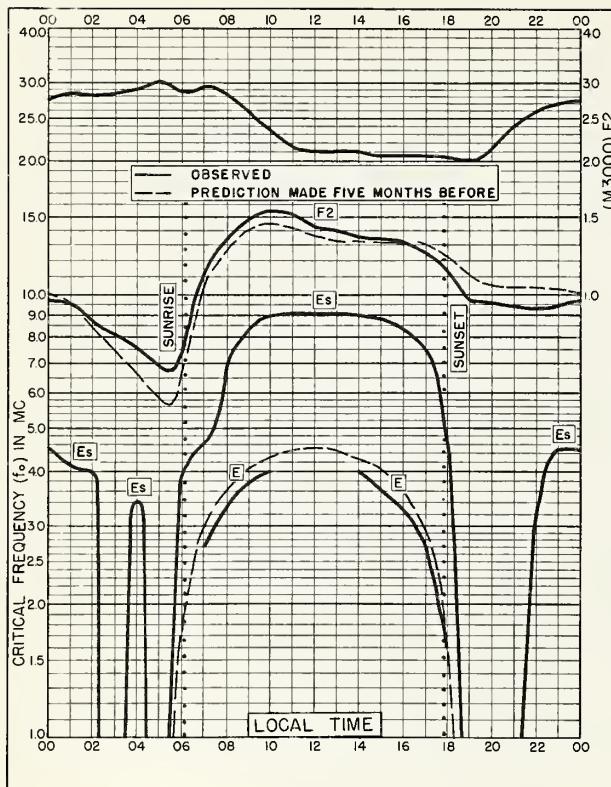


Fig. 37. HUANCAYO, PERU
12.0°S, 75.3°W APRIL 1958

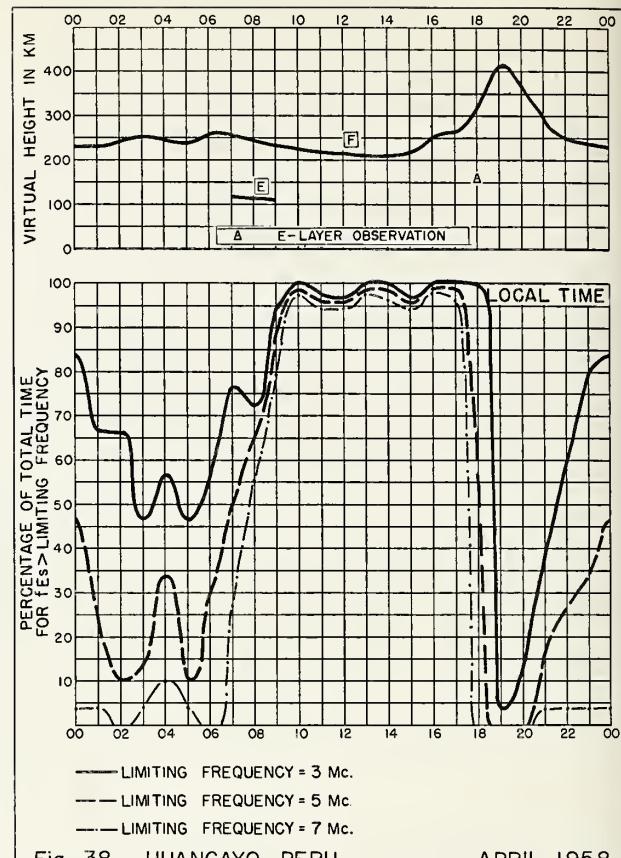


Fig. 38. HUANCAYO, PERU APRIL 1958

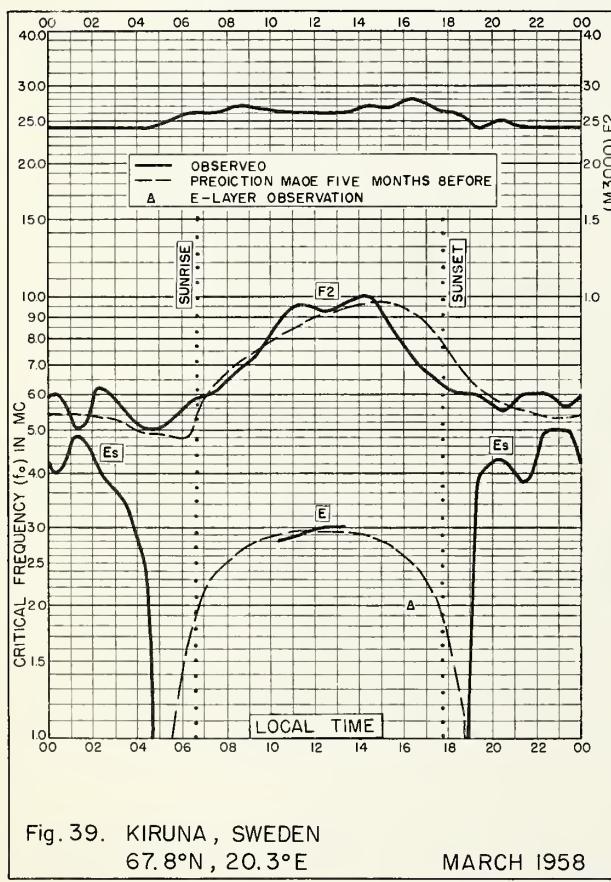


Fig. 39. KIRUNA, SWEDEN
67.8°N, 20.3°E MARCH 1958

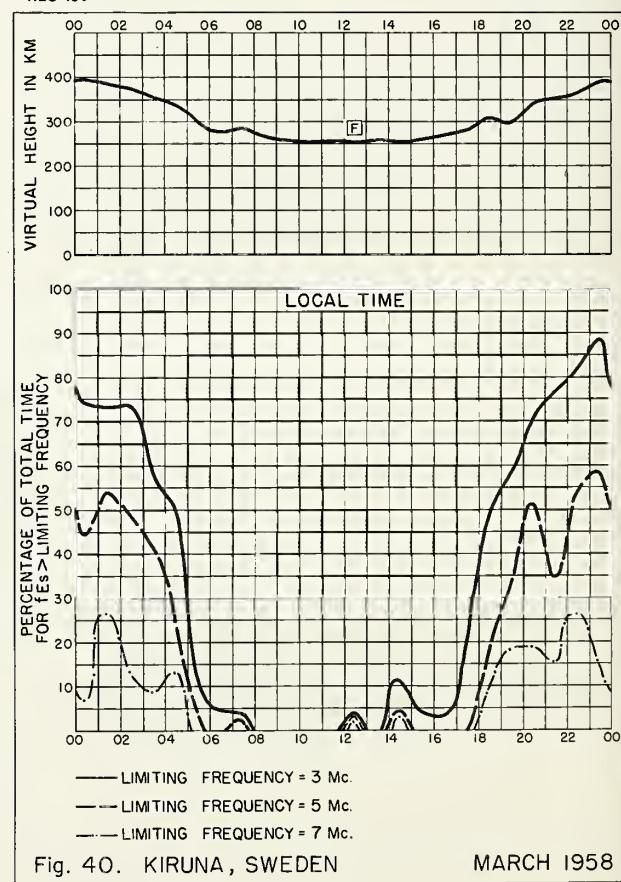


Fig. 40. KIRUNA, SWEDEN MARCH 1958

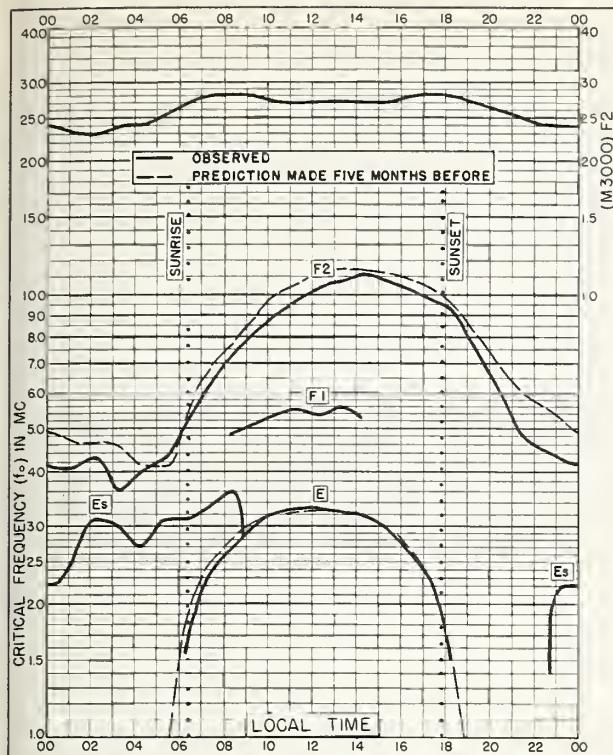


Fig. 41. UPSALA, SWEDEN
59.8°N, 17.6°E

MARCH 1958

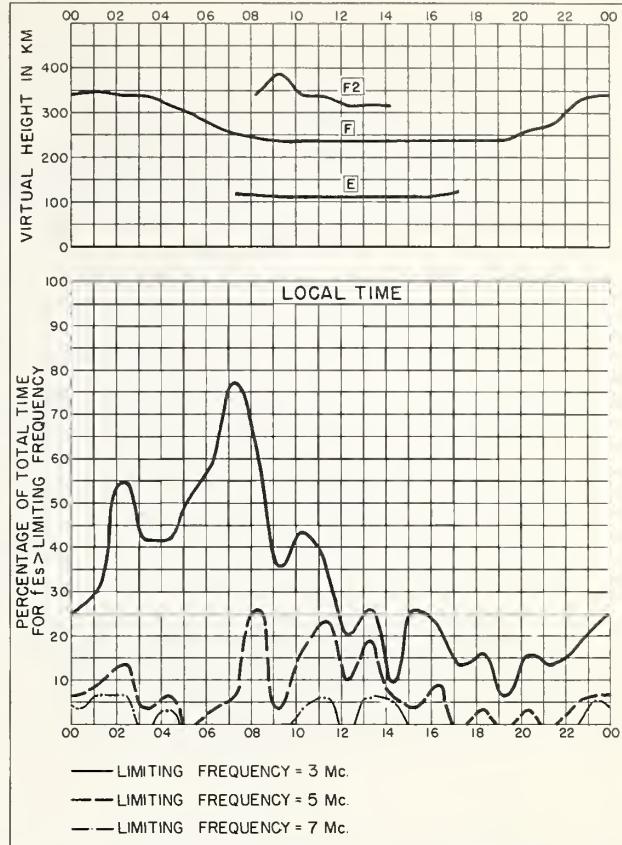


Fig. 42. UPSALA, SWEDEN

MARCH 1958

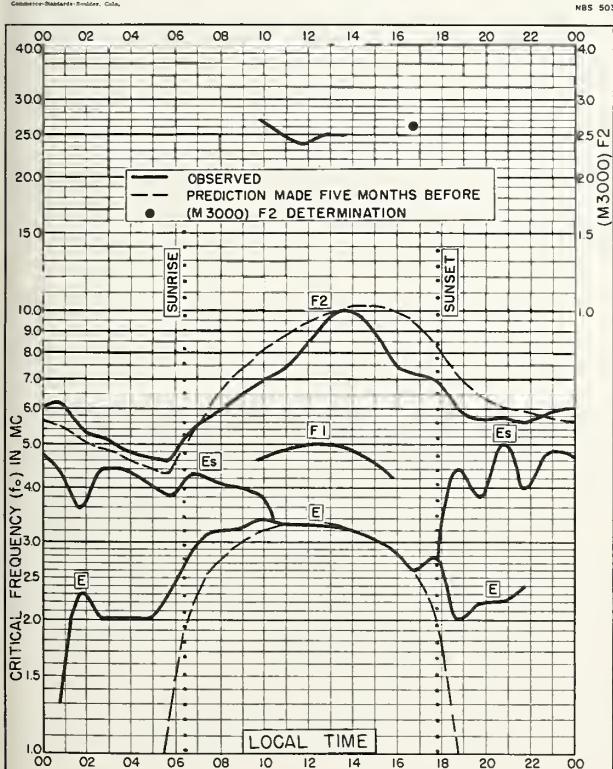


Fig. 43. CHURCHILL, CANADA
58.8°N, 94.2°W

MARCH 1958

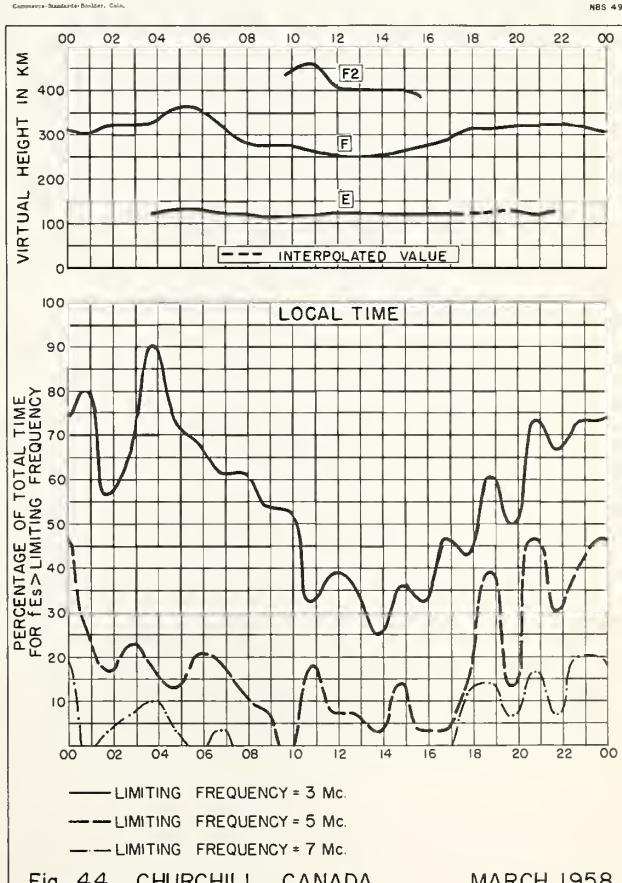


Fig. 44. CHURCHILL, CANADA

MARCH 1958

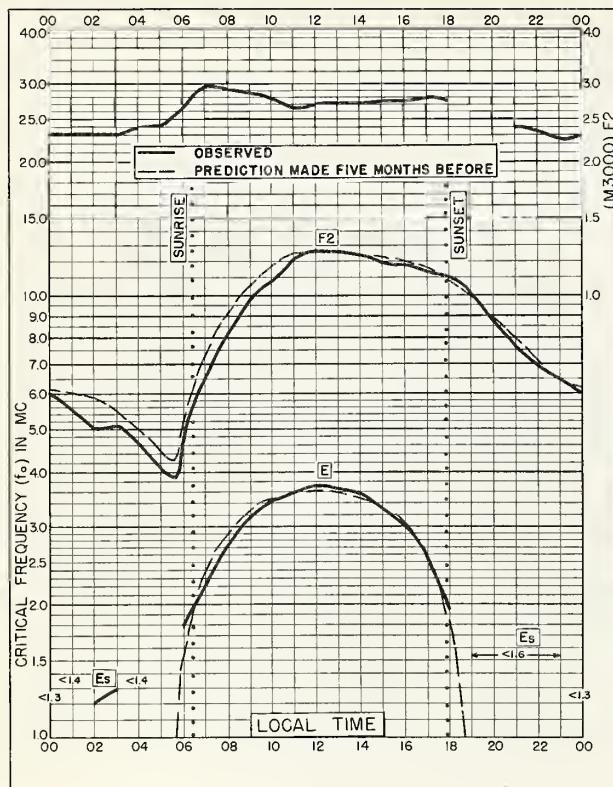


Fig. 45. SLOUGH, ENGLAND

51.5°N, 0.6°W

MARCH 1958

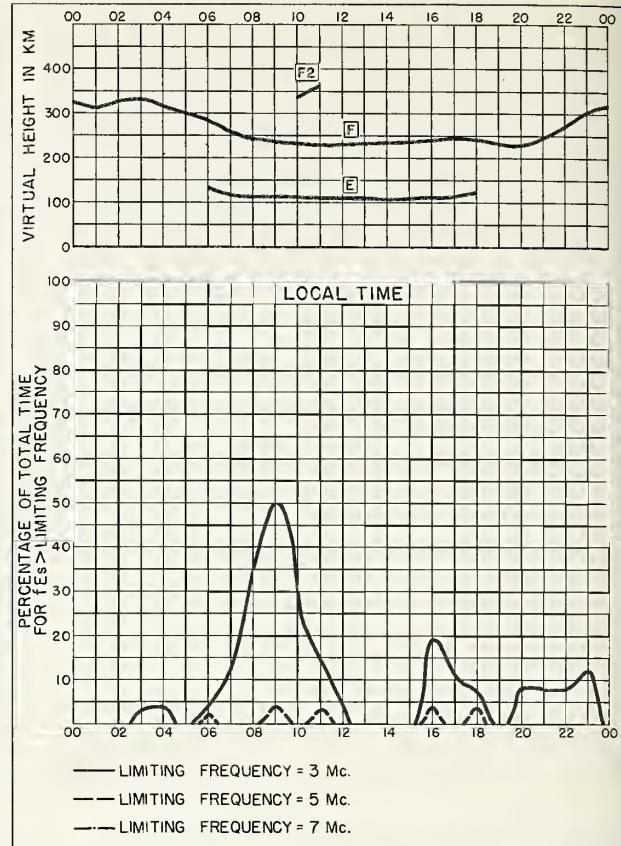


Fig. 46. SLOUGH, ENGLAND

MARCH 1958

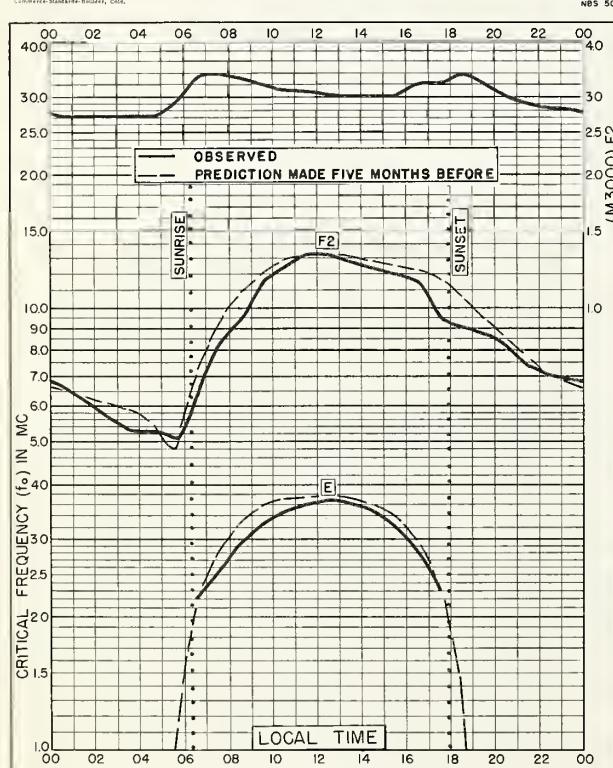


Fig. 47. SCHWARZENBURG, SWITZERLAND

46.8°N, 7.3°E

MARCH 1958

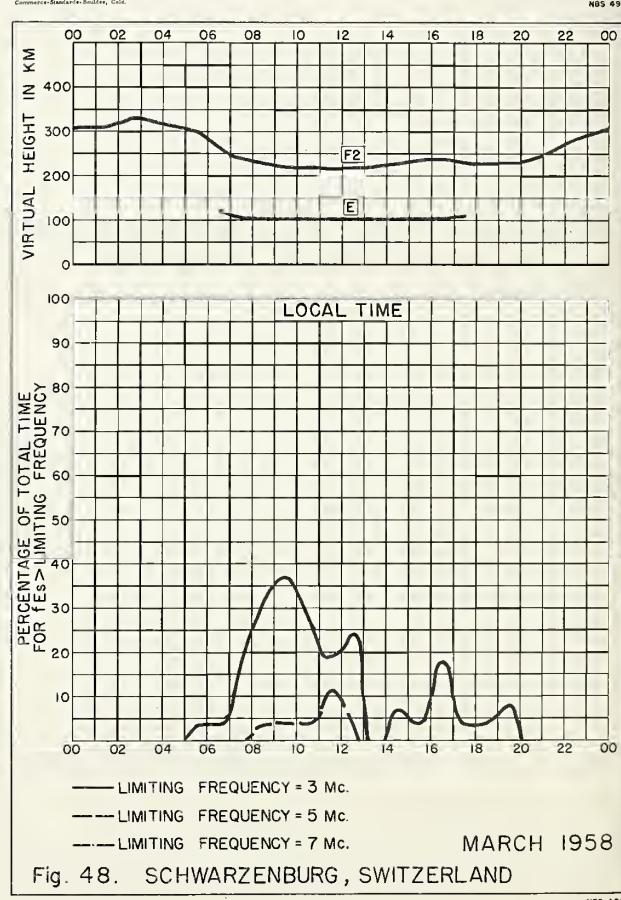
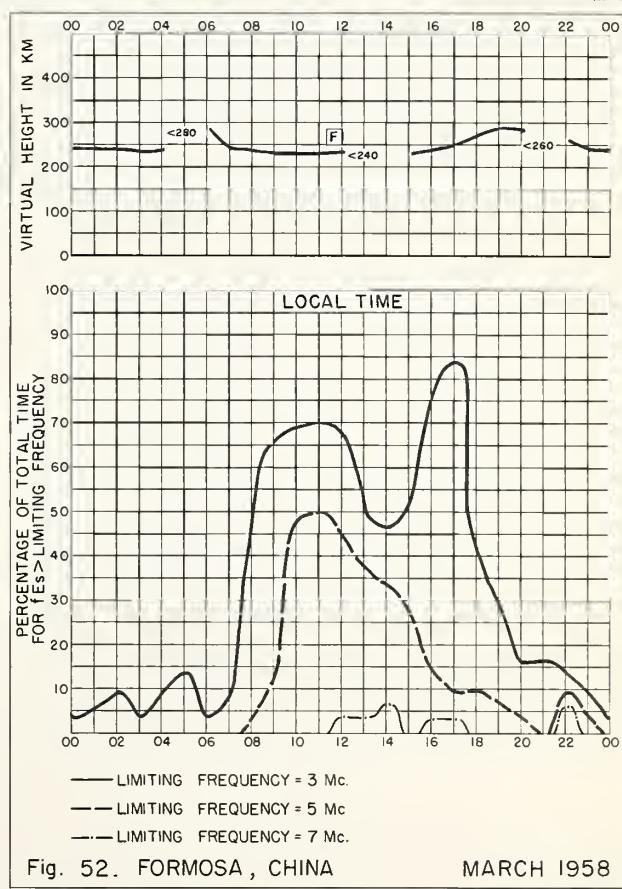
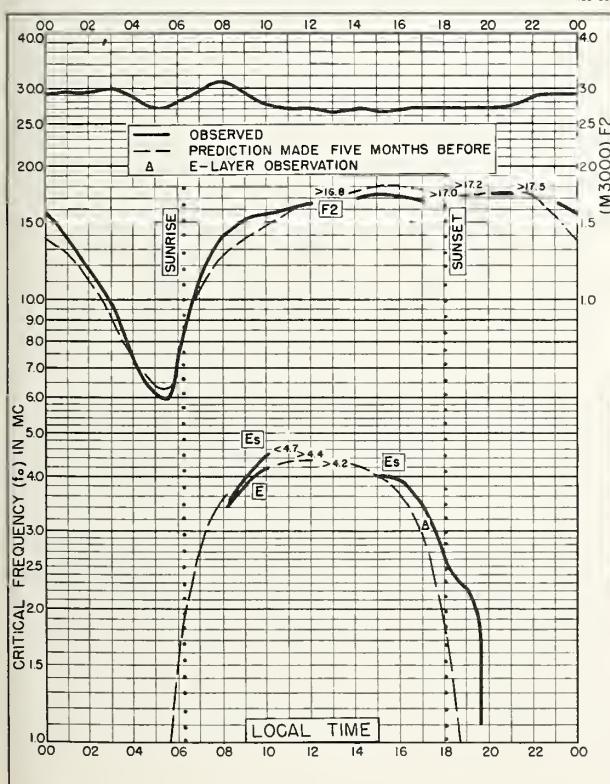
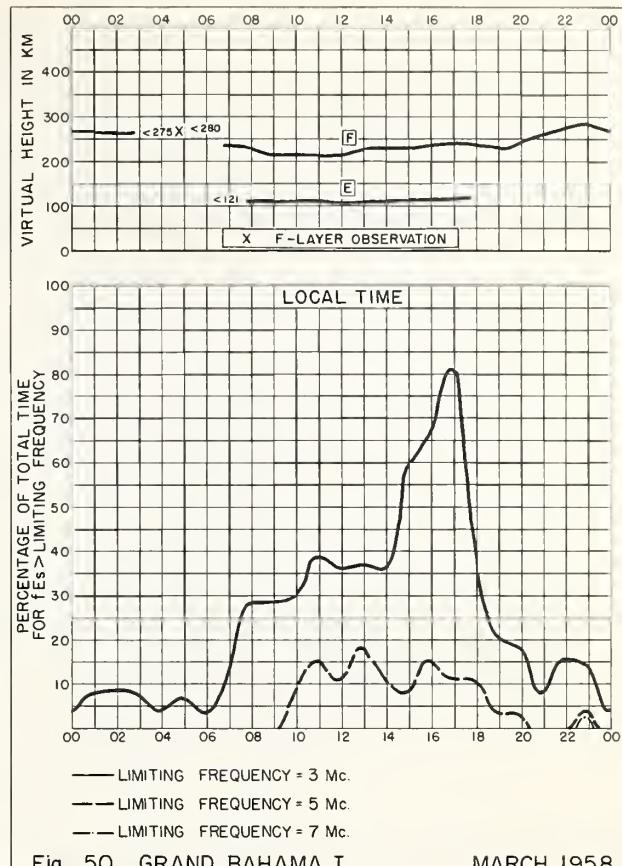
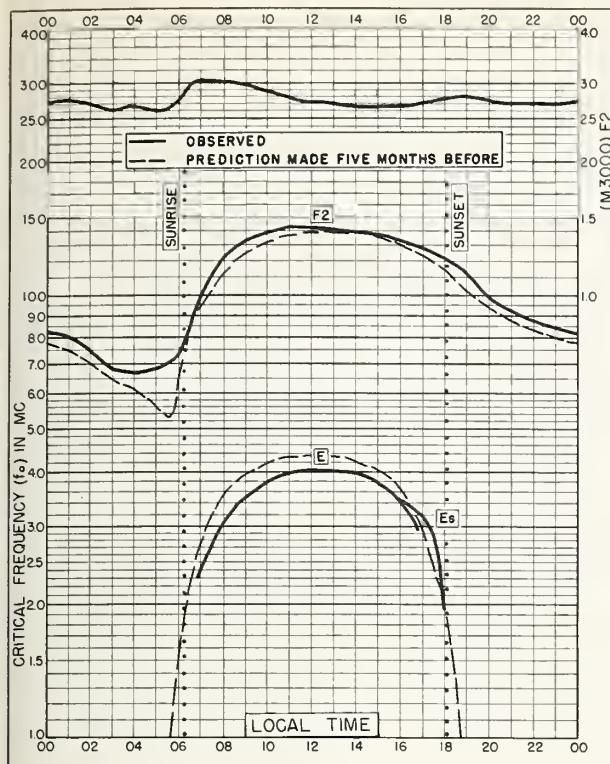
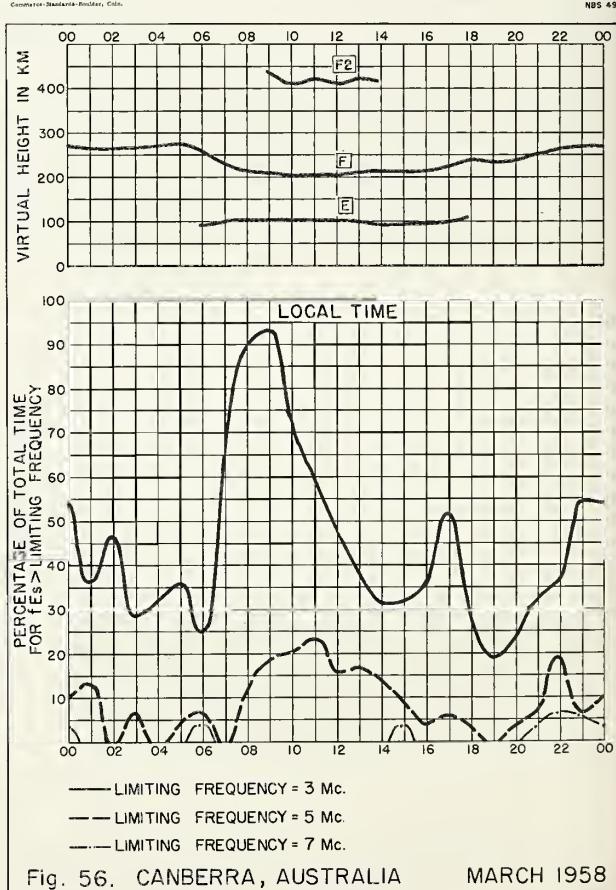
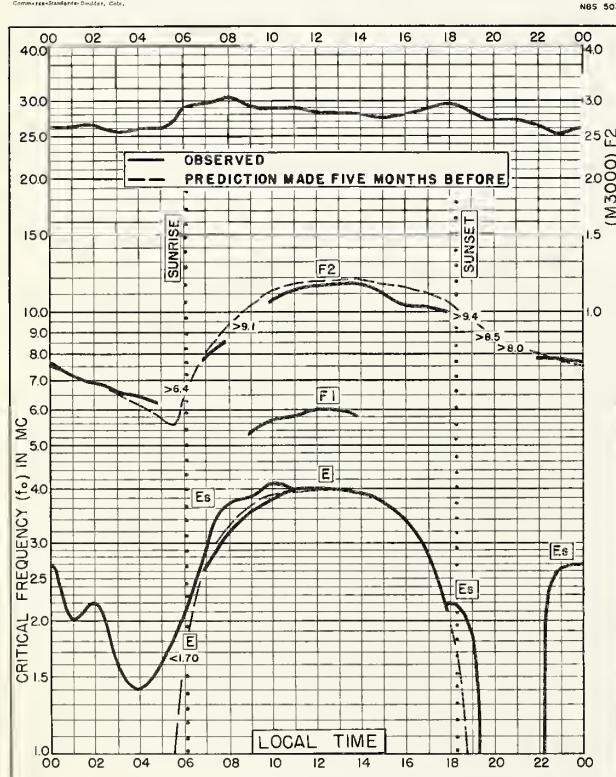
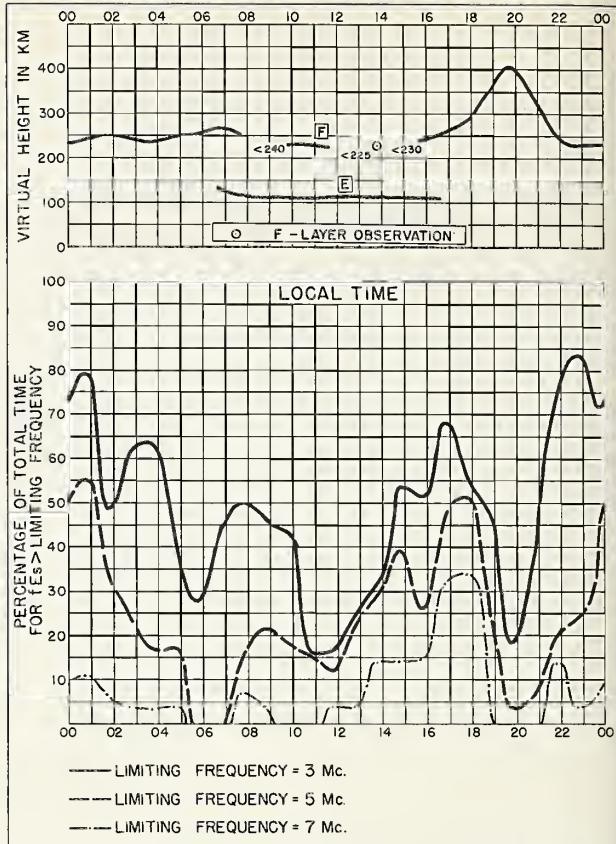
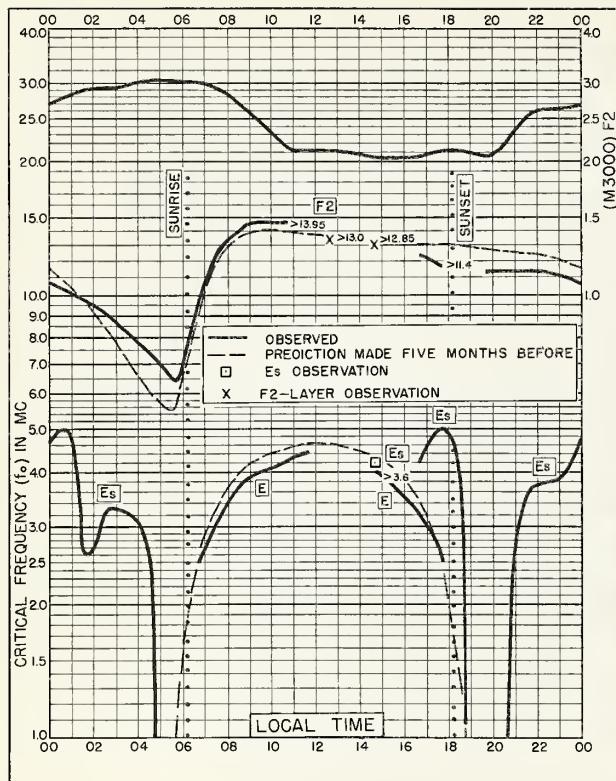


Fig. 48. SCHWARZENBURG, SWITZERLAND

MARCH 1958





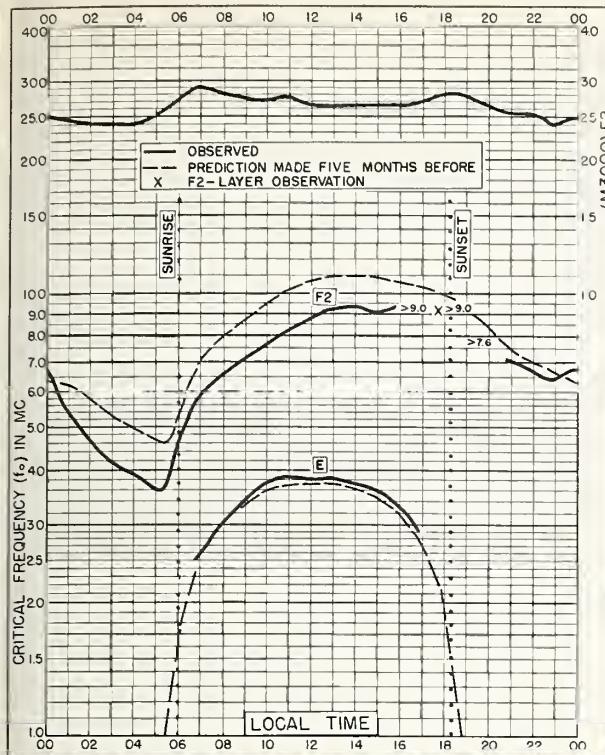


Fig. 57. HOBART, TASMANIA

42.9°S, 147.2°E

MARCH 1958

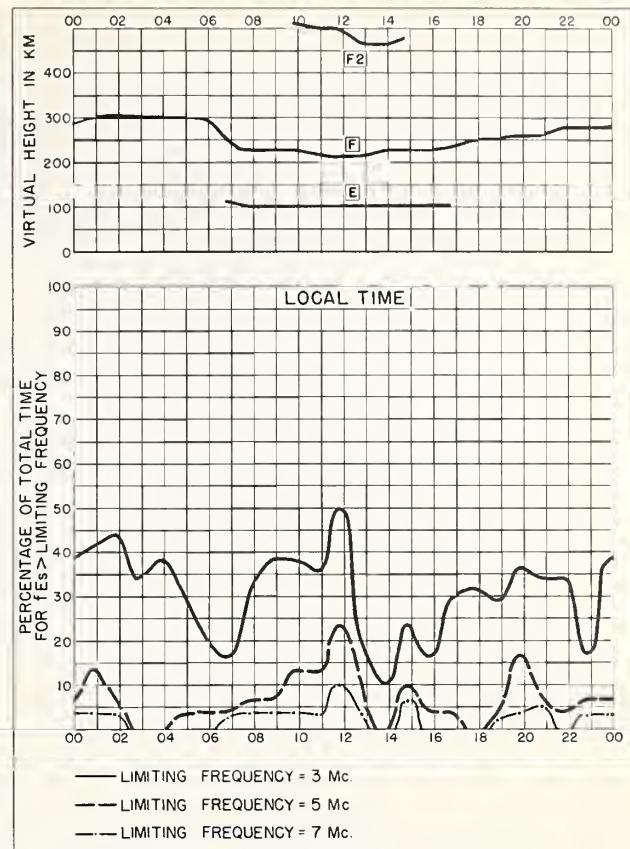


Fig. 58. HOBART, TASMANIA

MARCH 1958

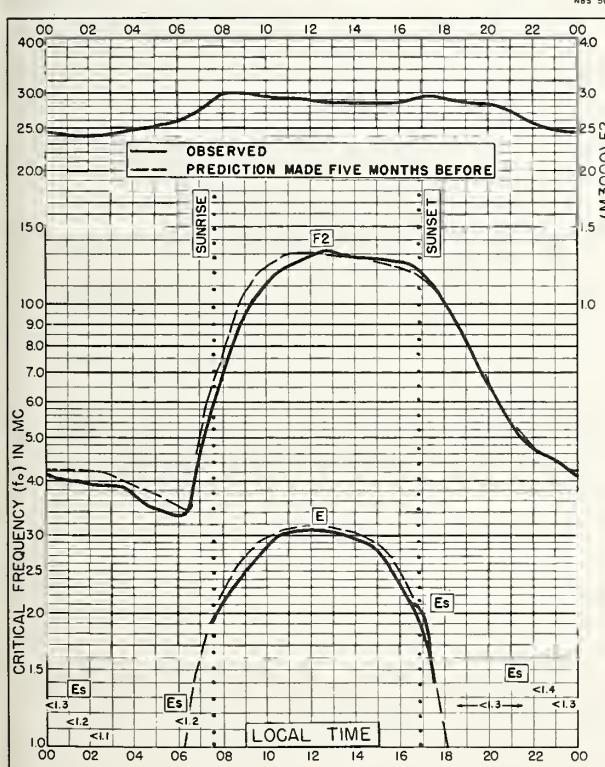


Fig. 59. MOSCOW, U.S.S.R.

55.5°N, 37.3°E

FEBRUARY 1958

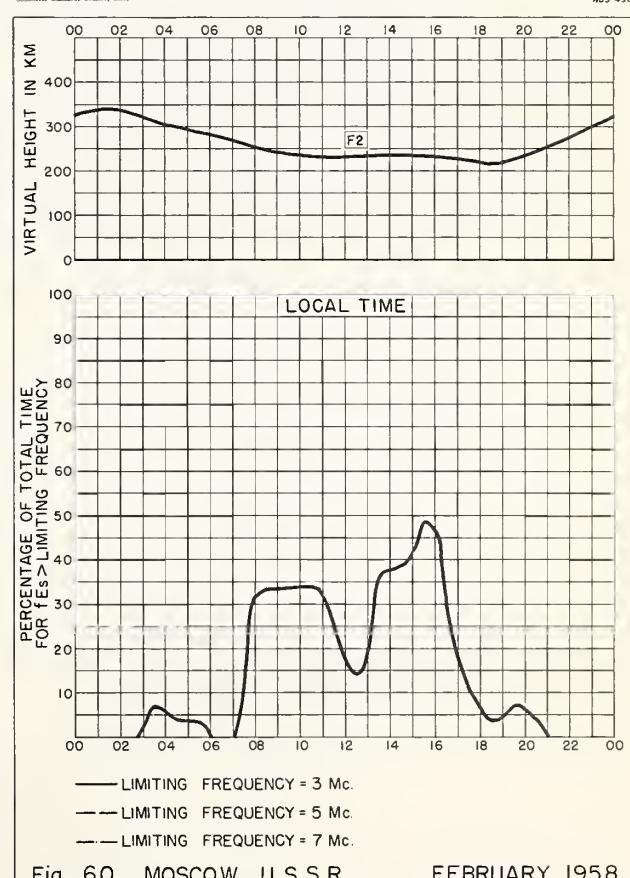


Fig. 60. MOSCOW, U.S.S.R.

FEBRUARY 1958

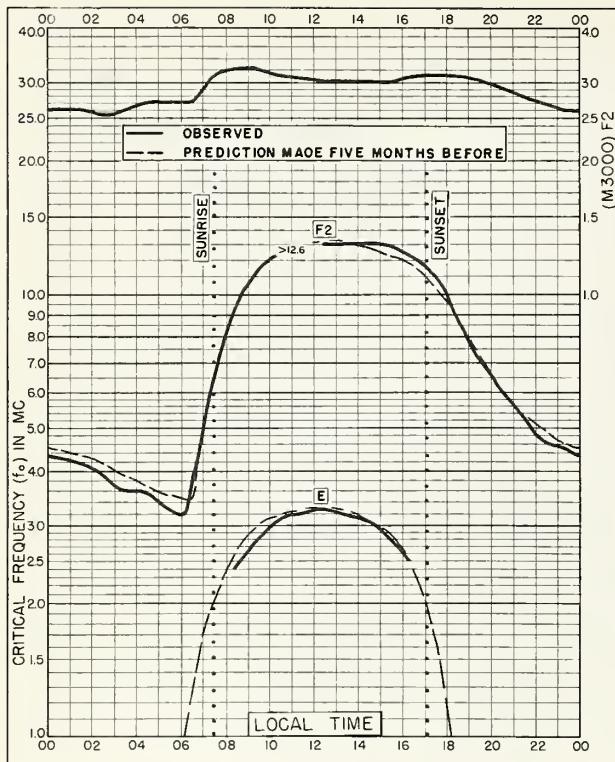


Fig. 61. De BILT, HOLLAND

52.1°N, 5.2°E

FEBRUARY 1958

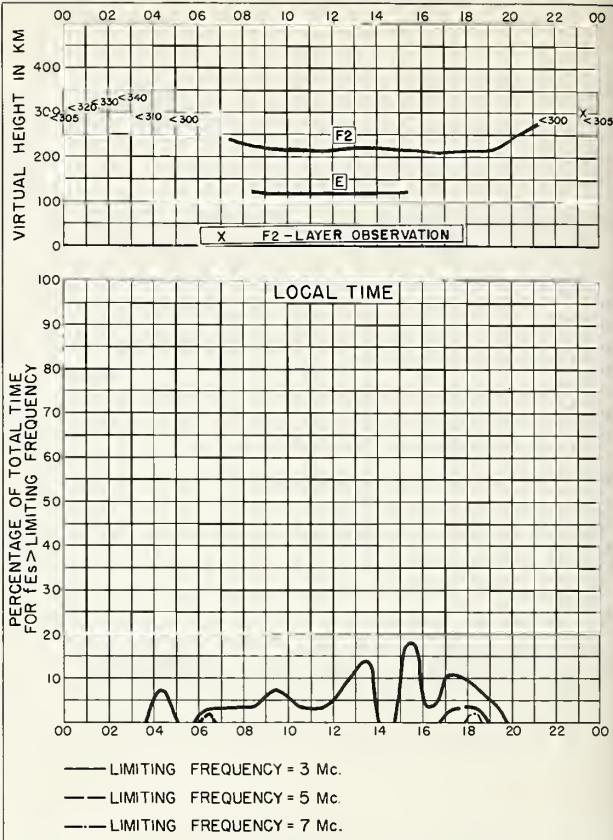


Fig. 62. De BILT, HOLLAND

FEBRUARY 1958

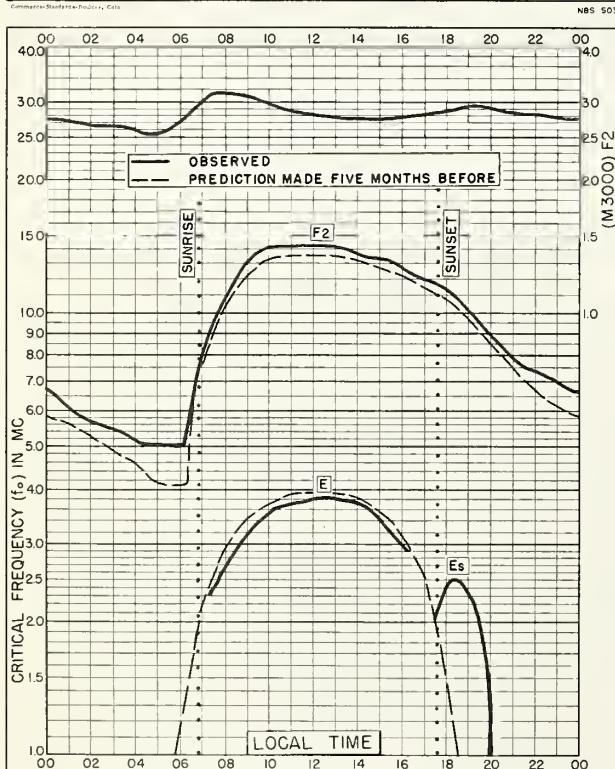


Fig. 63. TOKYO, JAPAN

35.7°N, 139.5°E

FEBRUARY 1958

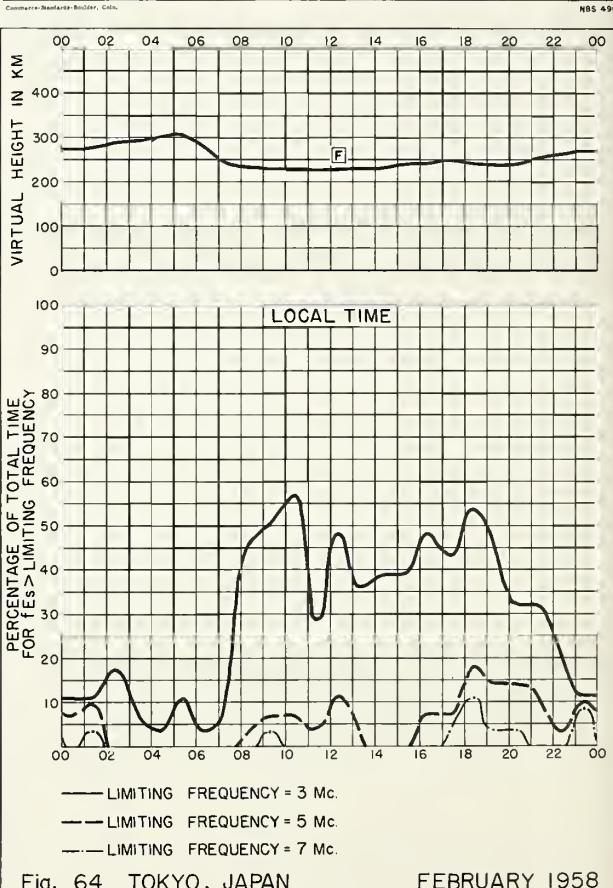


Fig. 64. TOKYO, JAPAN

FEBRUARY 1958

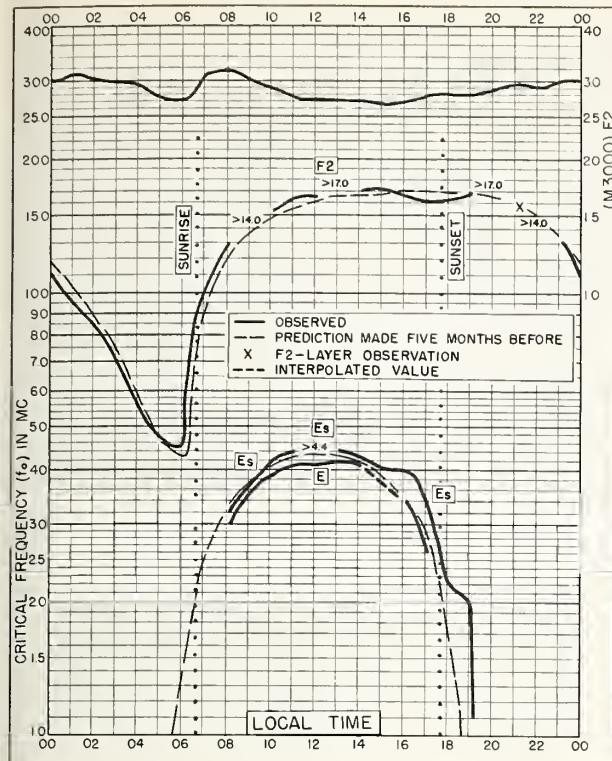


Fig. 65. FORMOSA, CHINA
25.0°N, 121.5°E FEBRUARY 1958

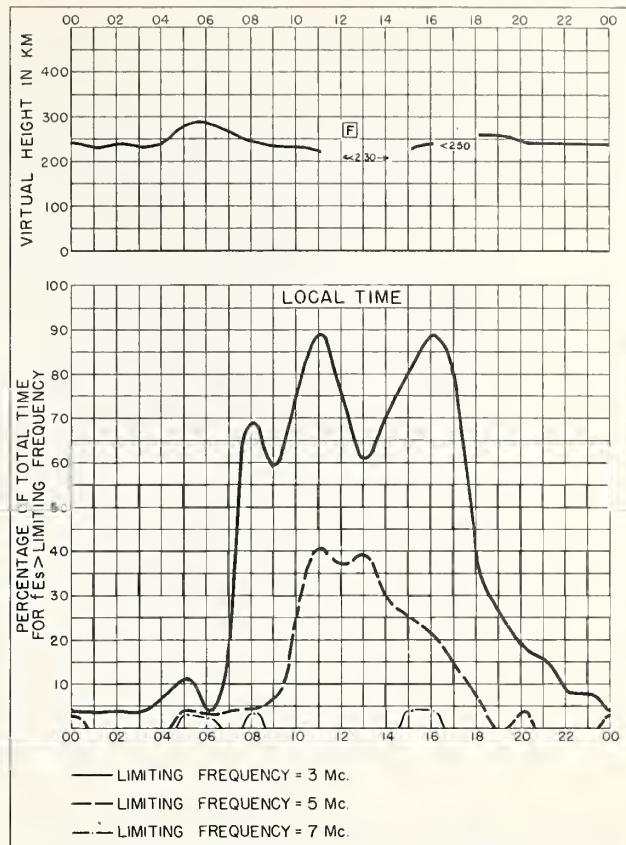


Fig. 66. FORMOSA, CHINA FEBRUARY 1958

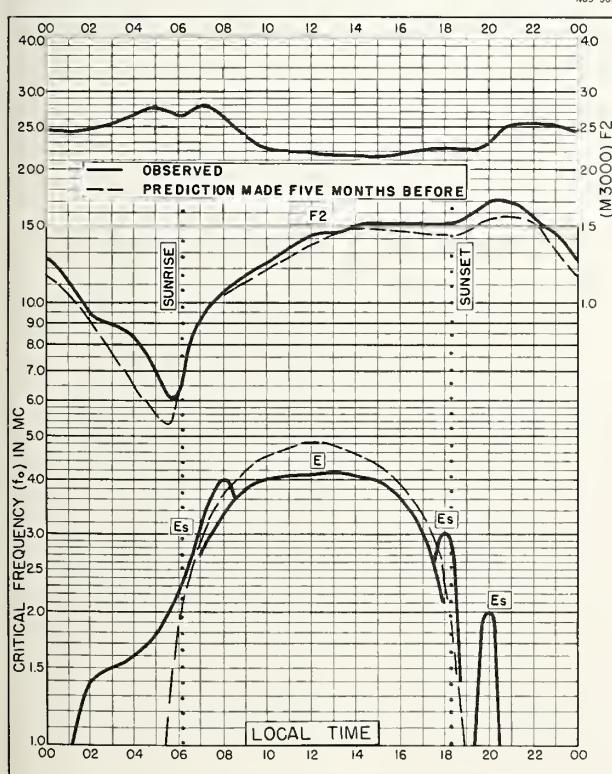


Fig. 67. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E FEBRUARY 1958

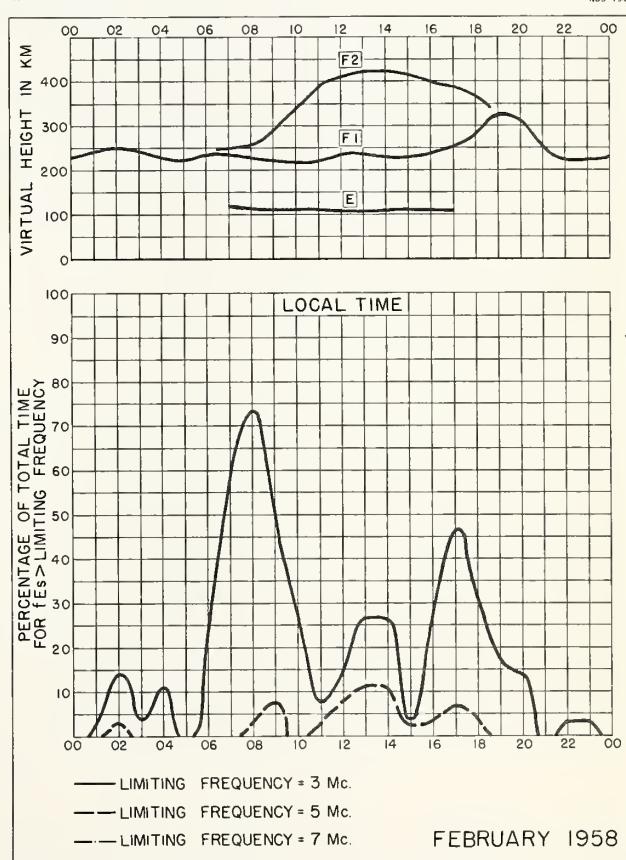


Fig. 68. LEOPOLDVILLE, BELGIAN CONGO FEBRUARY 1958

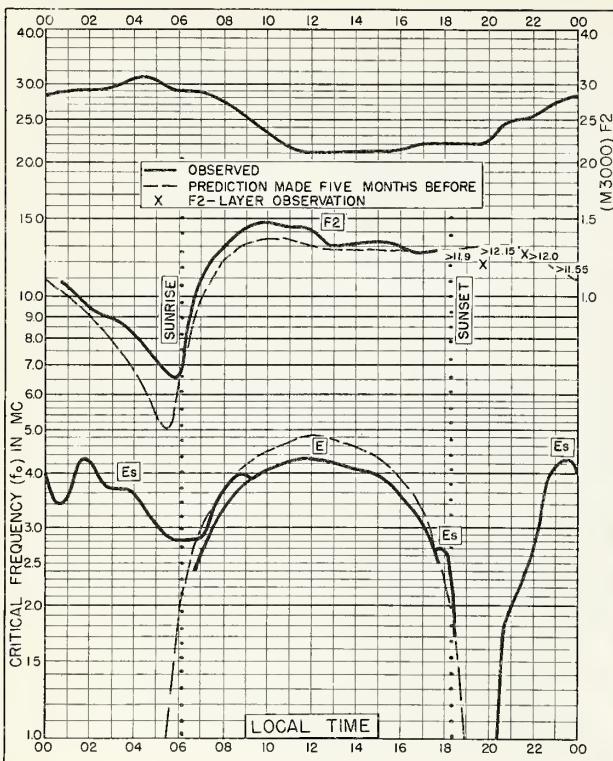


Fig. 69. CHICLAYO, PERU
6.8°S, 79.8°W FEBRUARY 1958

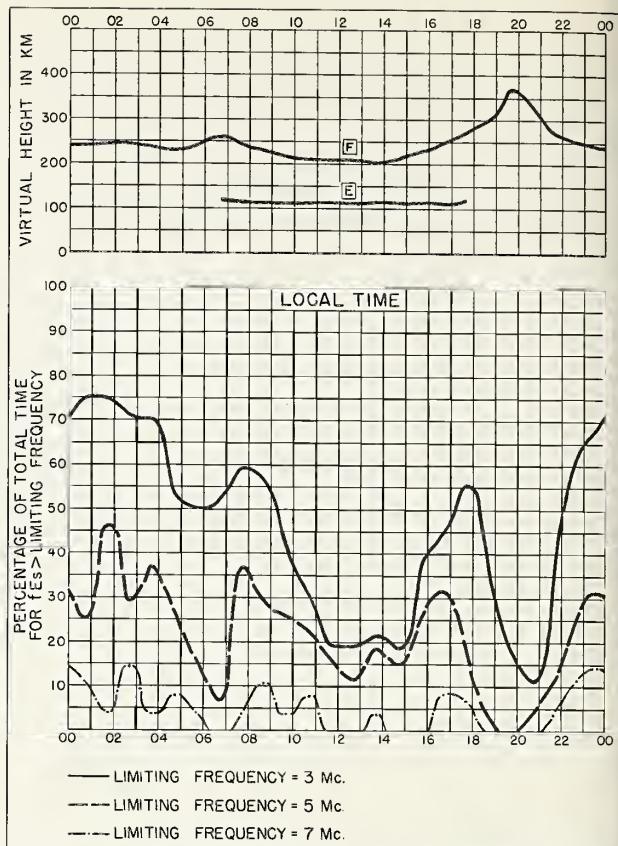


Fig. 70. CHICLAYO, PERU FEBRUARY 1958

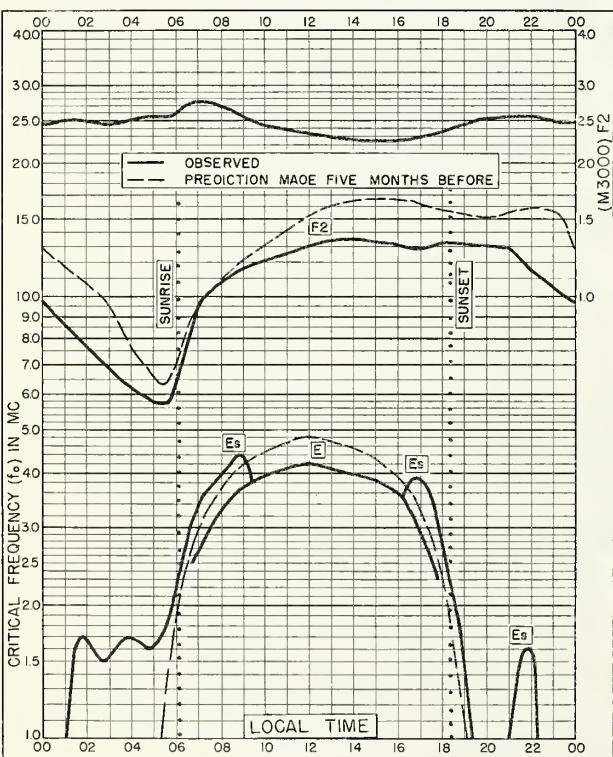


Fig. 71. ELISABETHVILLE, BELGIAN CONGO
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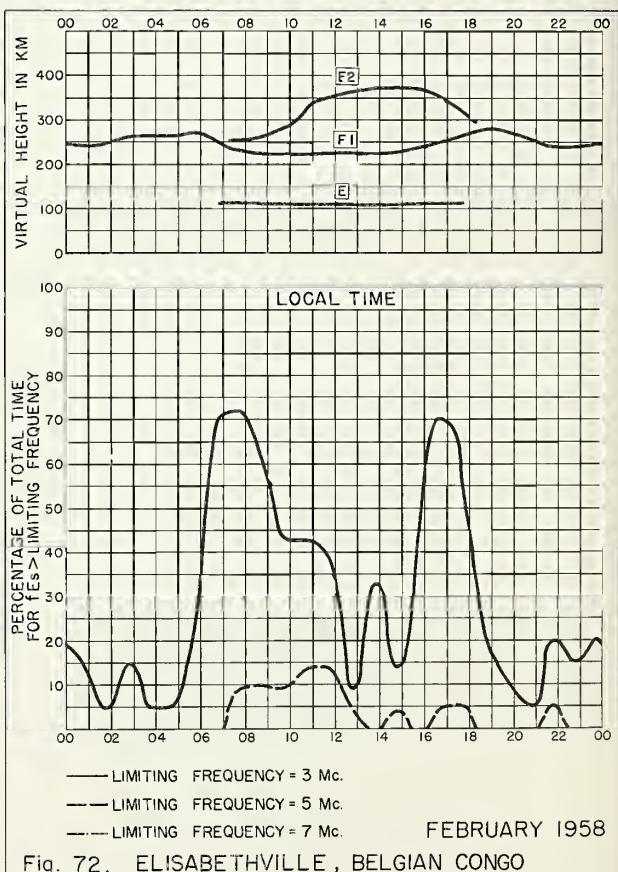


Fig. 72. ELISABETHVILLE, BELGIAN CONGO FEBRUARY 1958

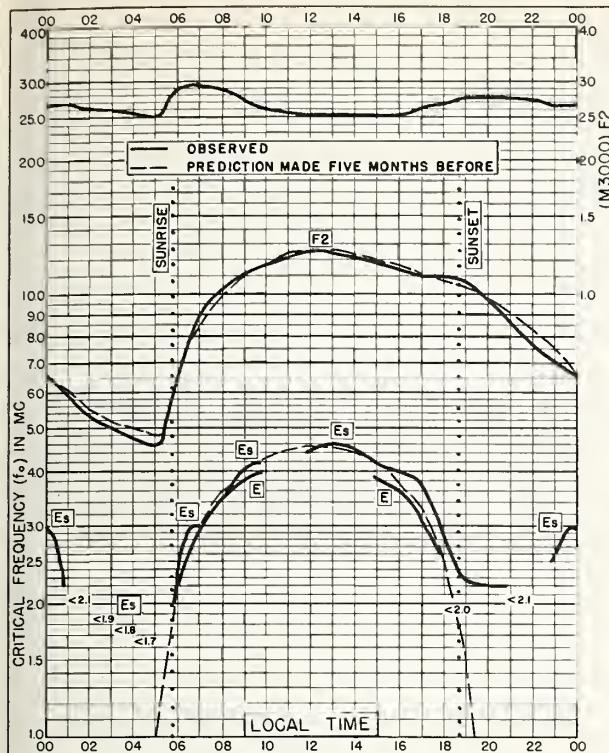


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E FEBRUARY 1958

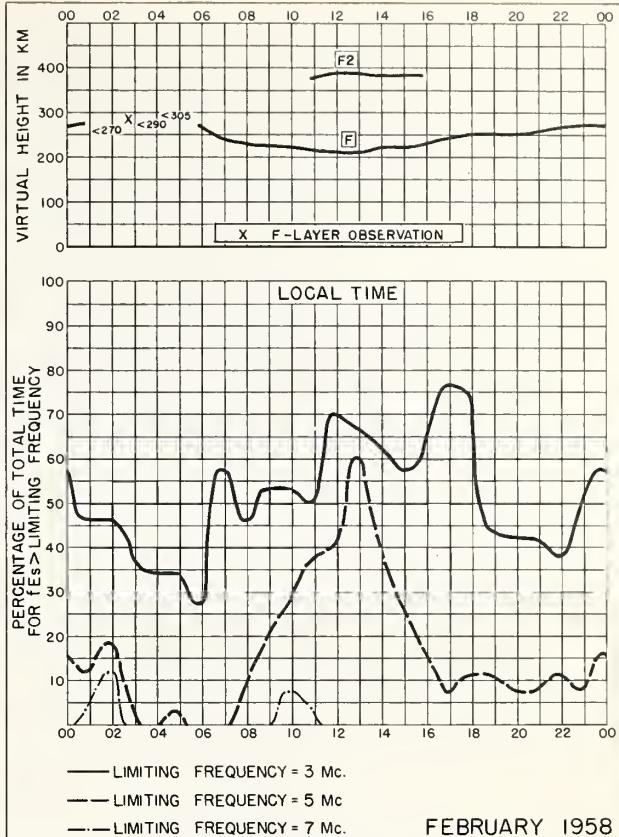


Fig. 74. JOHANNESBURG, UNION OF S. AFRICA FEBRUARY 1958

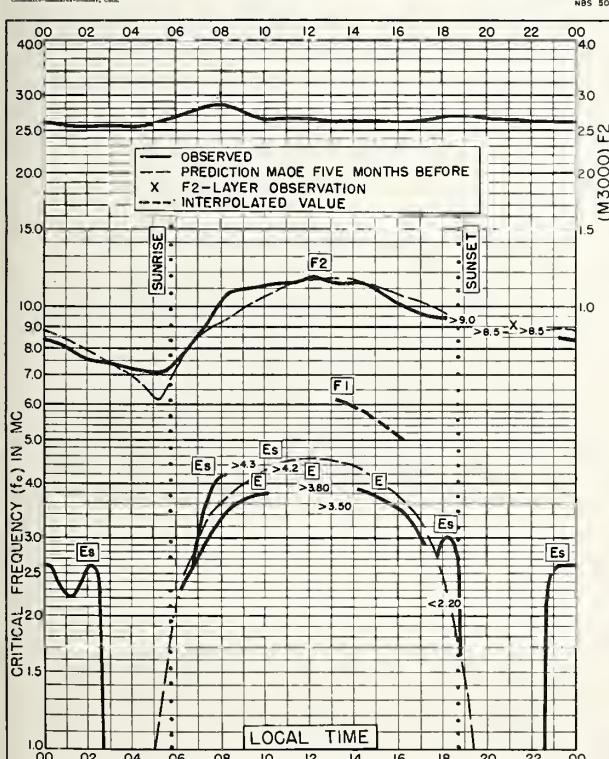


Fig. 75. BRISBANE, AUSTRALIA
27.5°S, 152.9°E FEBRUARY 1958

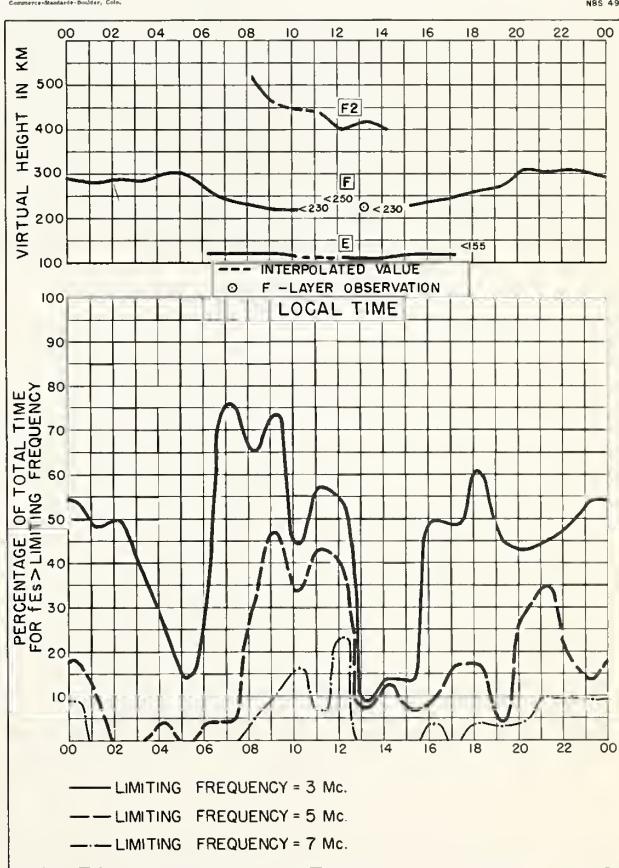


Fig. 76. BRISBANE, AUSTRALIA FEBRUARY 1958

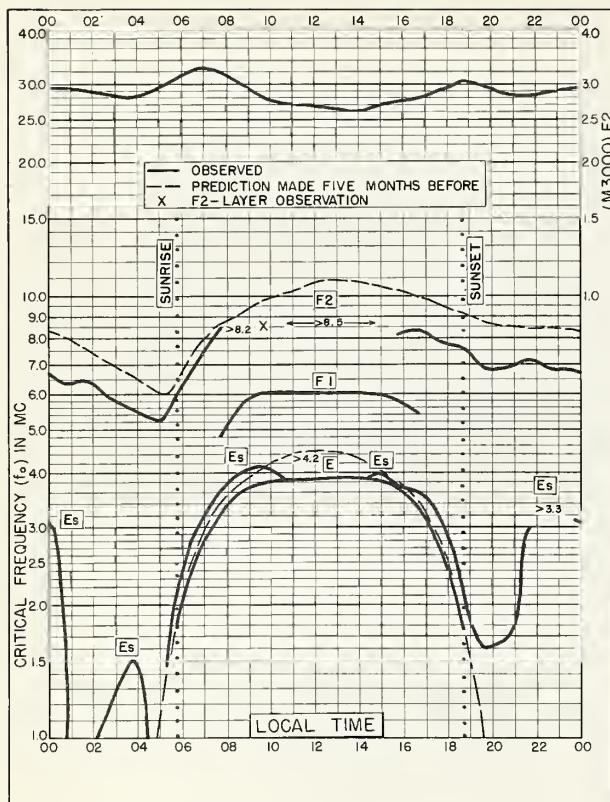
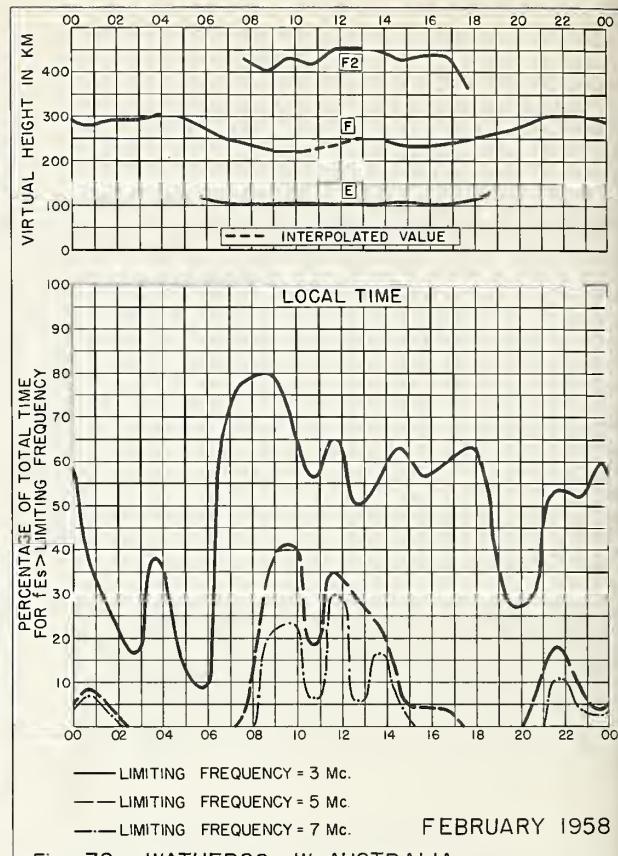


Fig. 77. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E FEBRUARY 1958



FEBRUARY 1958

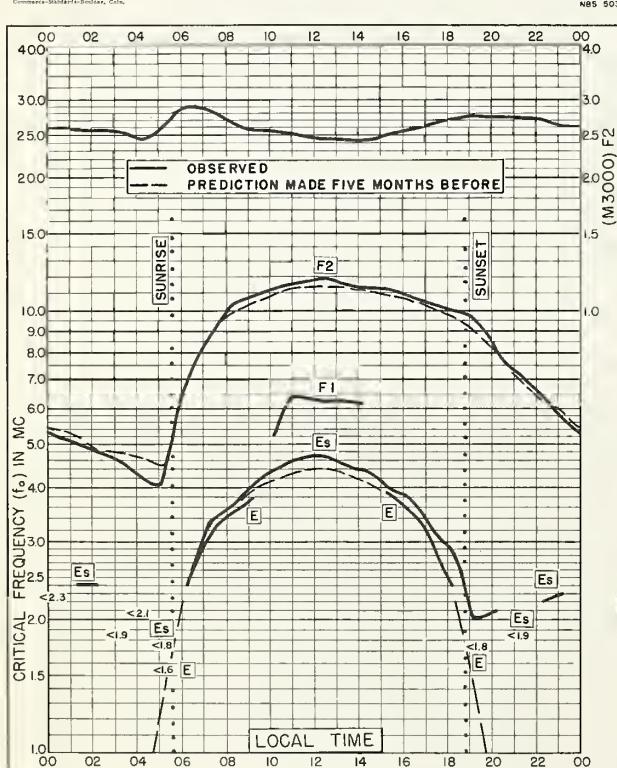
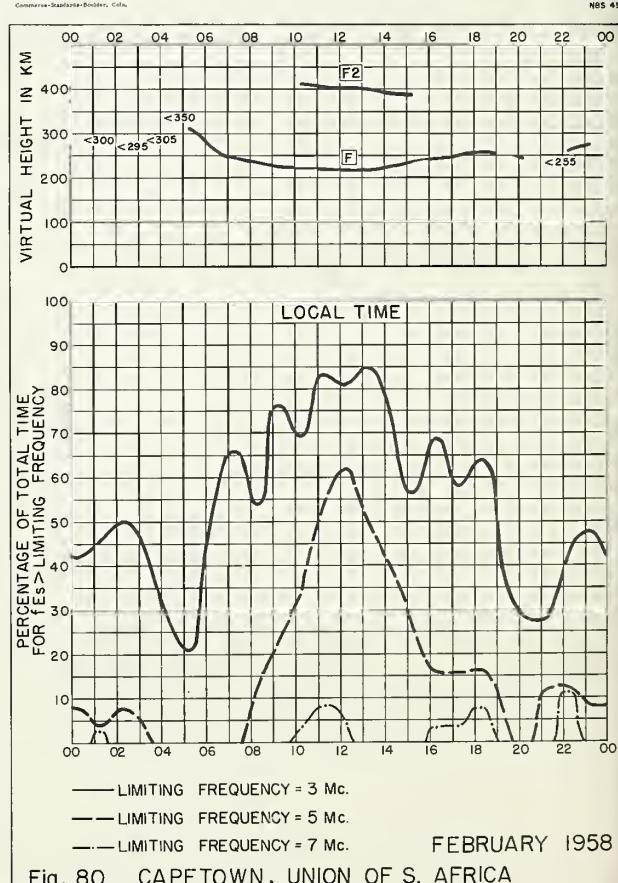


Fig. 79. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E FEBRUARY 1958



FEBRUARY 1958

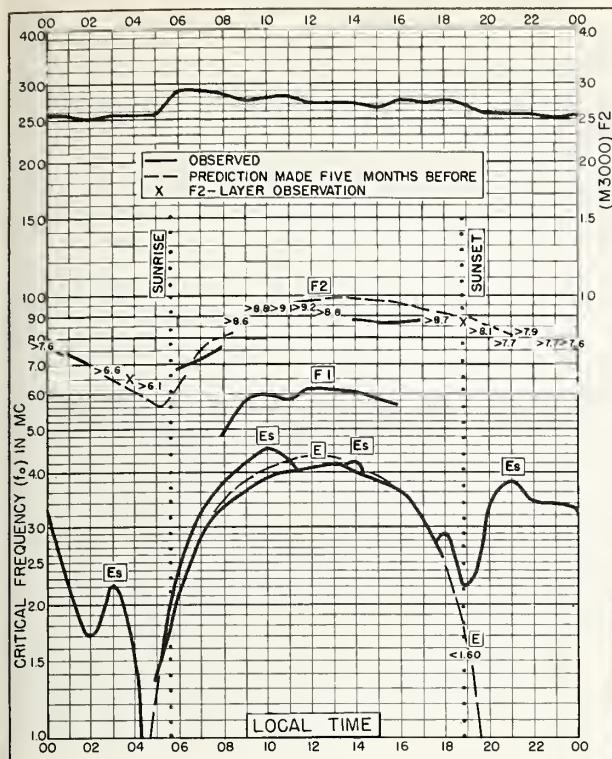


Fig. 81. CANBERRA, AUSTRALIA
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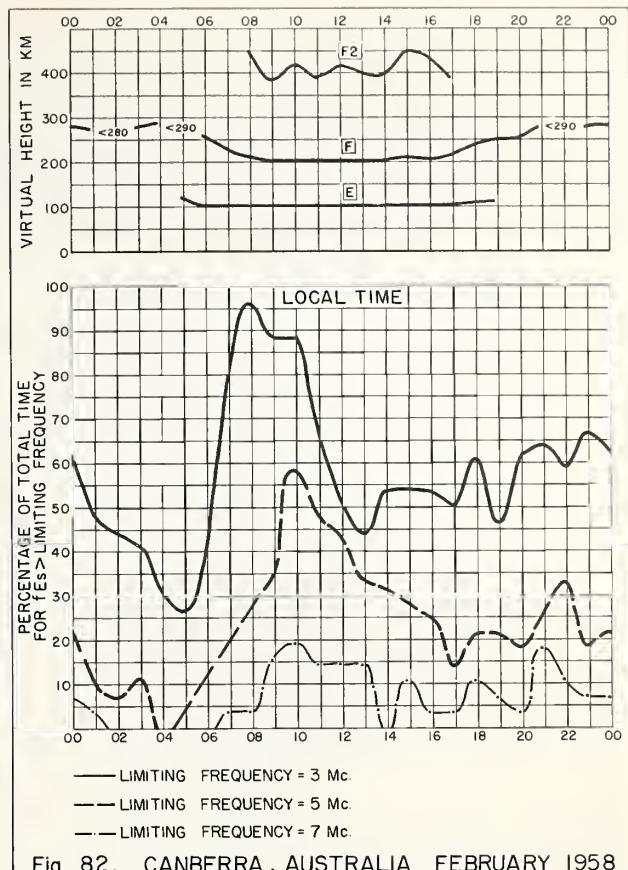


Fig. 82. CANBERRA, AUSTRALIA FEBRUARY 1958

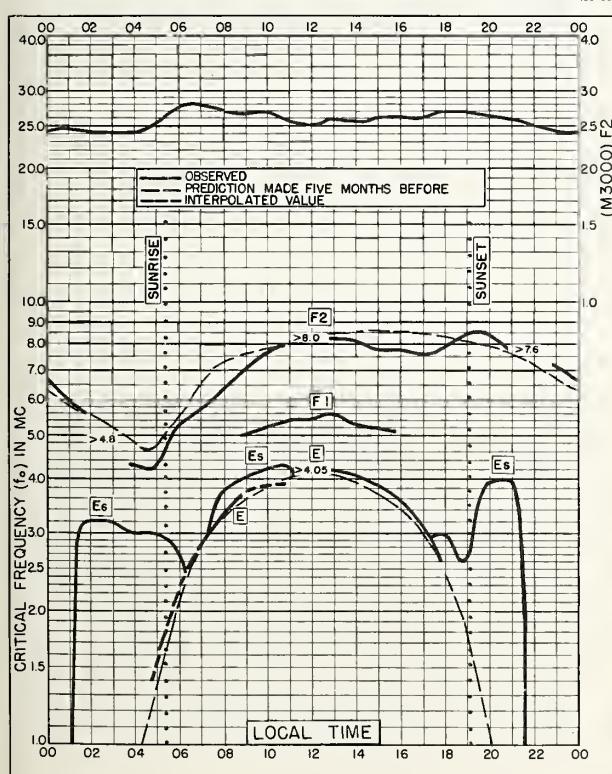


Fig. 83. HOBART, TASMANIA
42.9°S, 147.2°E FEBRUARY 1958

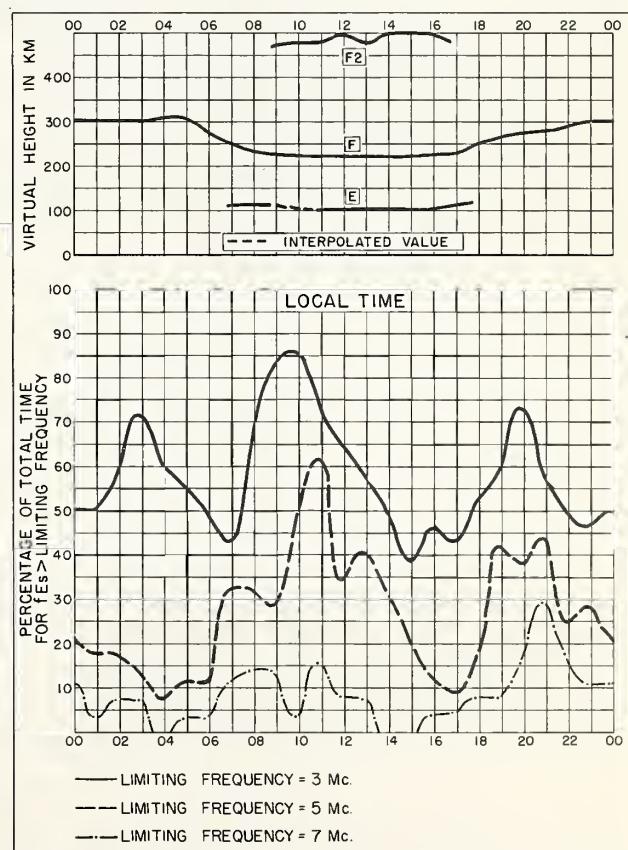


Fig. 84. HOBART, TASMANIA FEBRUARY 1958

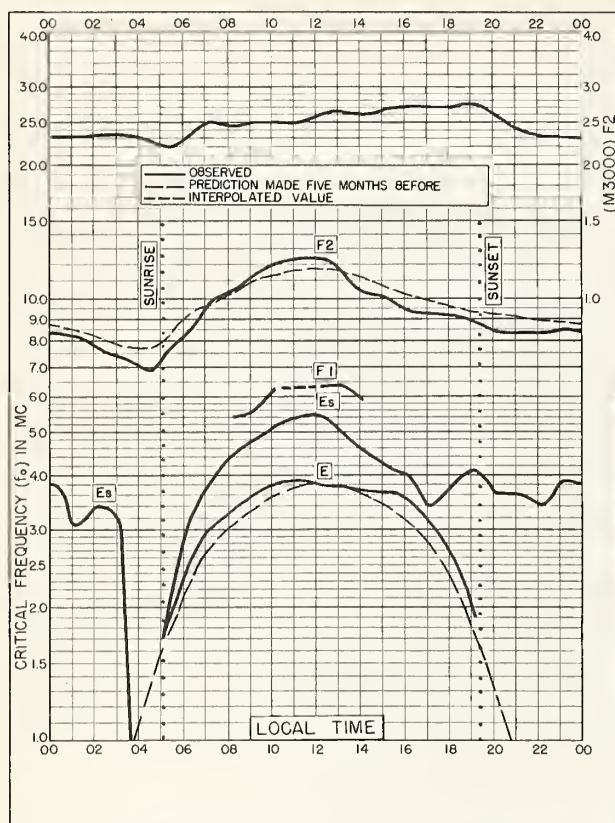


Fig. 85. FALKLAND IS.
51.7°S, 57.8°W FEBRUARY 1958

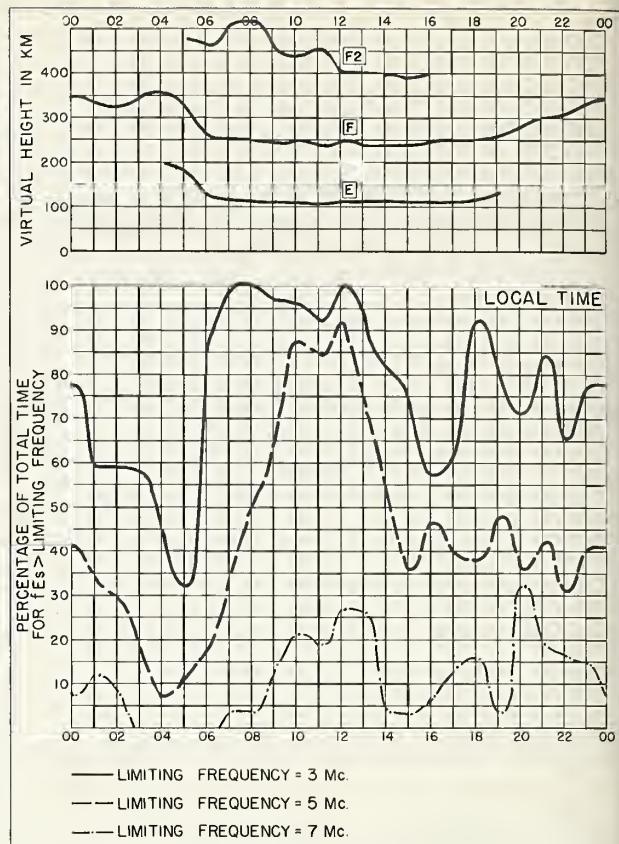


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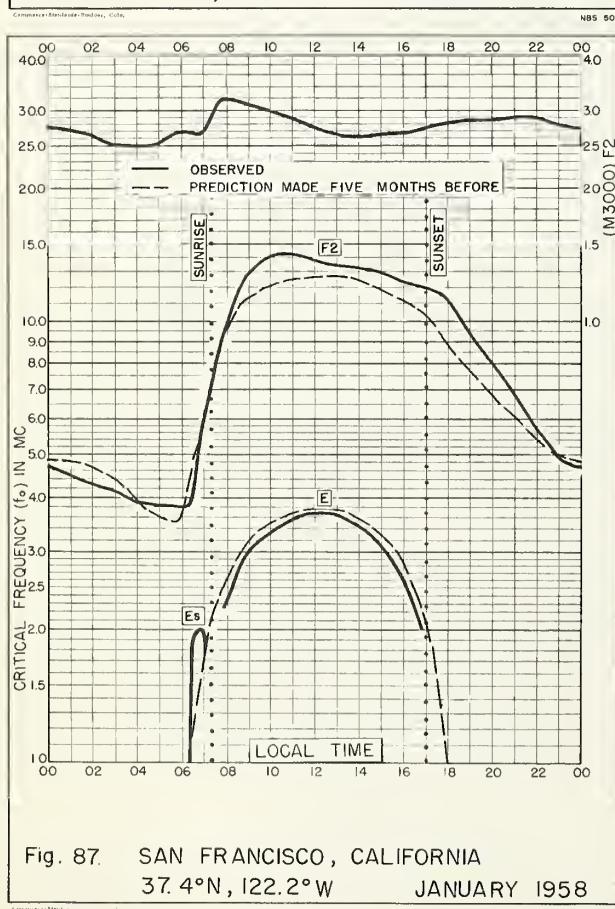


Fig. 87. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JANUARY 1958

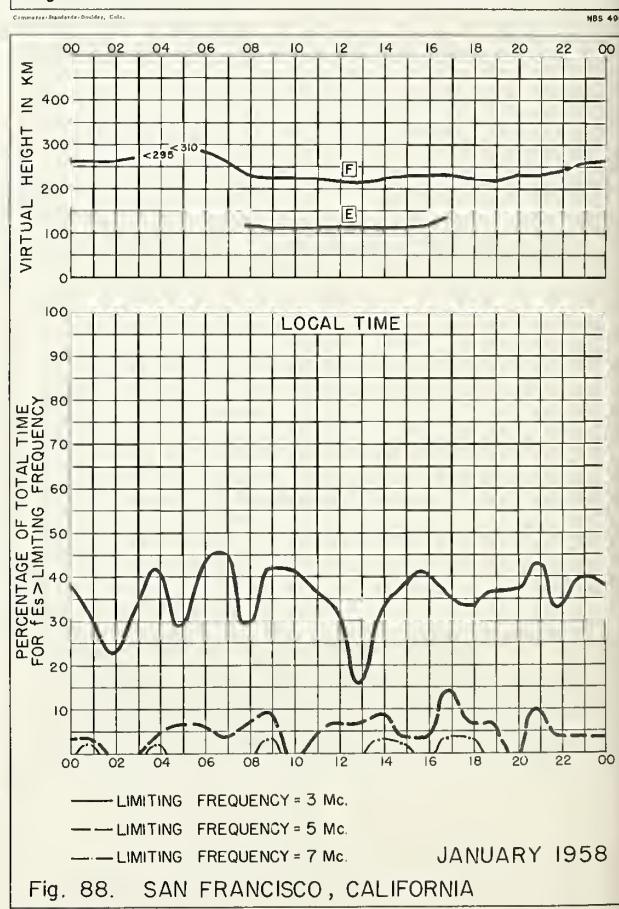


Fig. 88. SAN FRANCISCO, CALIFORNIA JANUARY 1958

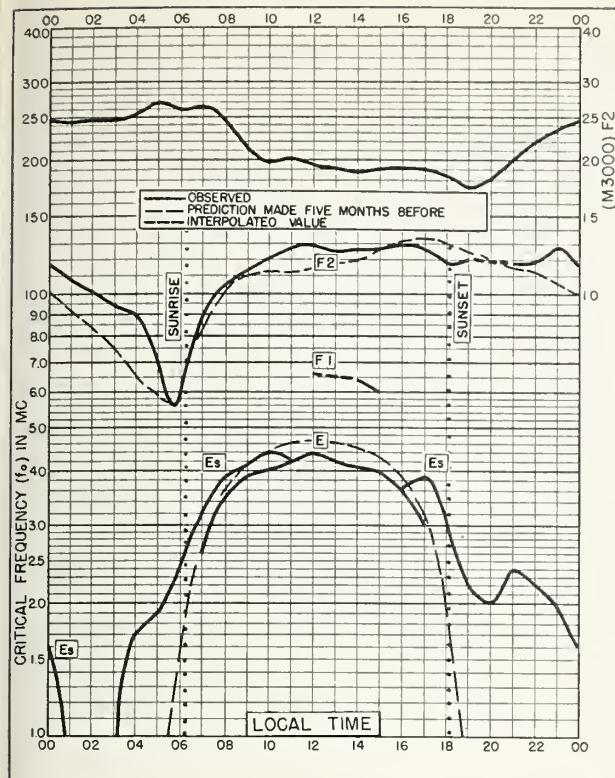


Fig. 89. BUNIA, BELGIAN CONGO

I. 5° N, 30.2° E

JANUARY 1958

NBS 503

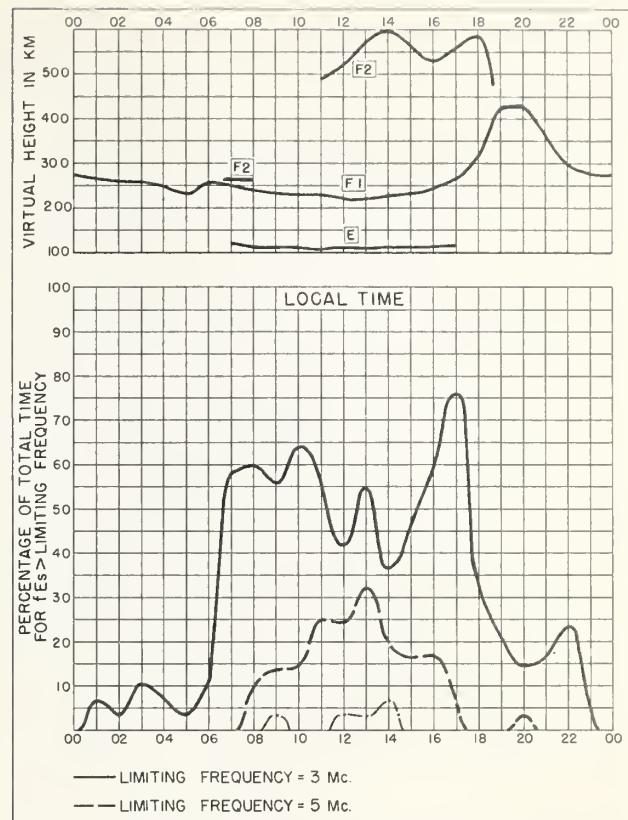


Fig. 90. BUNIA, BELGIAN CONGO JANUARY 1958

NBS 490

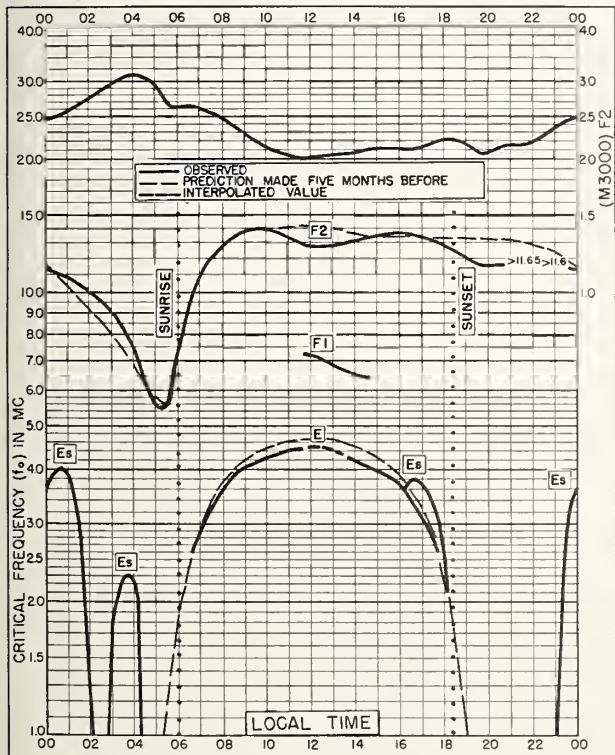


Fig. 91. CHICLAYO, PERU

6 8°S 79 8°W

JANUARY 1958

ANSWER

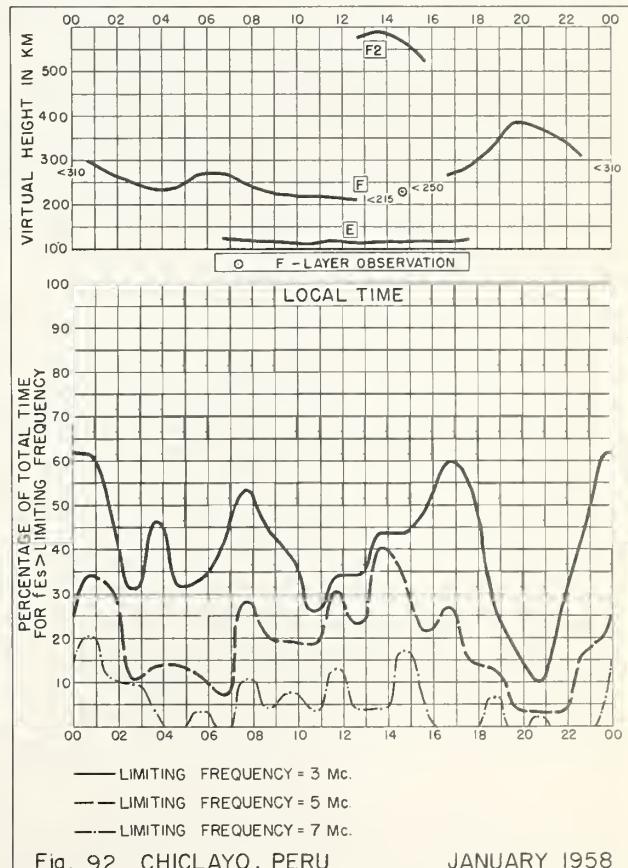


Fig. 91. CHICLAYO, PERU

6 8°S 79 8°W

JANUARY 1958

• 19 • 82

JANUARY 1958

1000

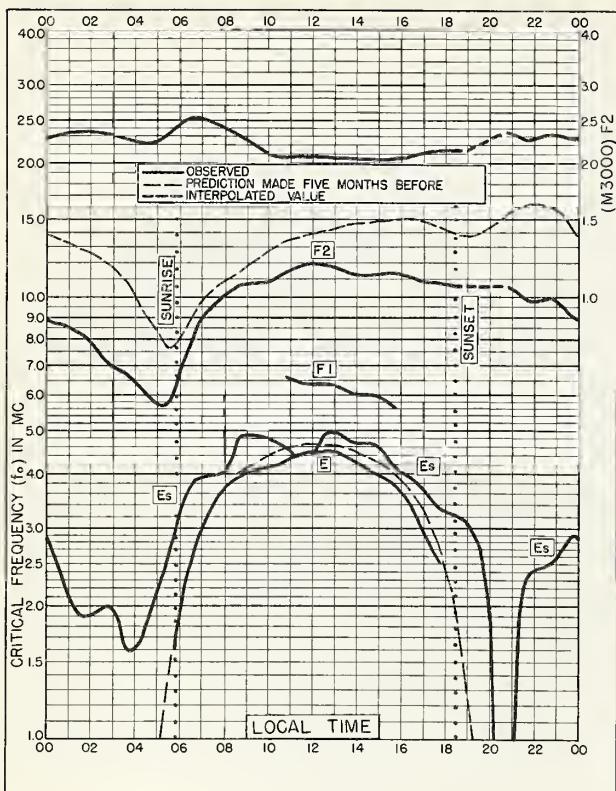


Fig. 93. ELISABETHVILLE, BELGIAN CONGO
II. 6° S, 27.5° E JANUARY 1958

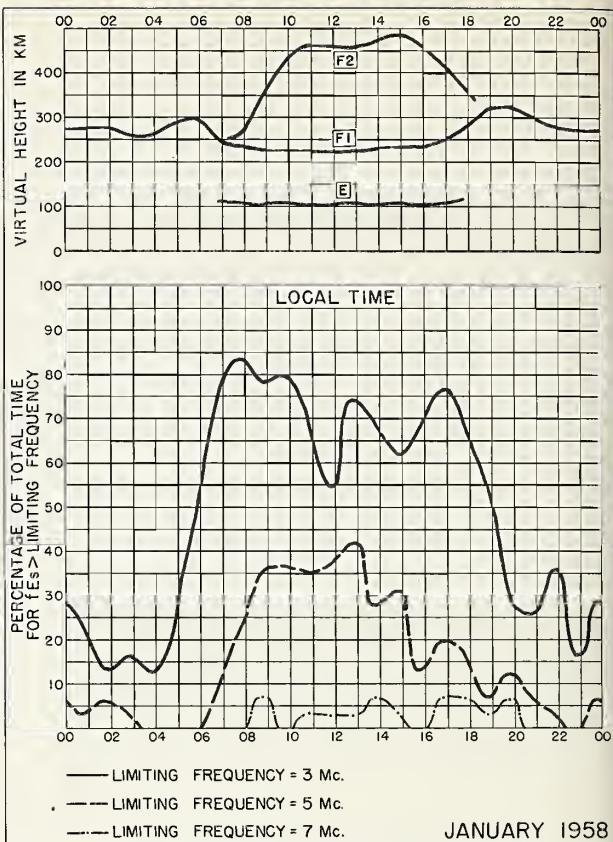


Fig. 94. ELISABETHVILLE, BELGIAN CONGO JANUARY 1958

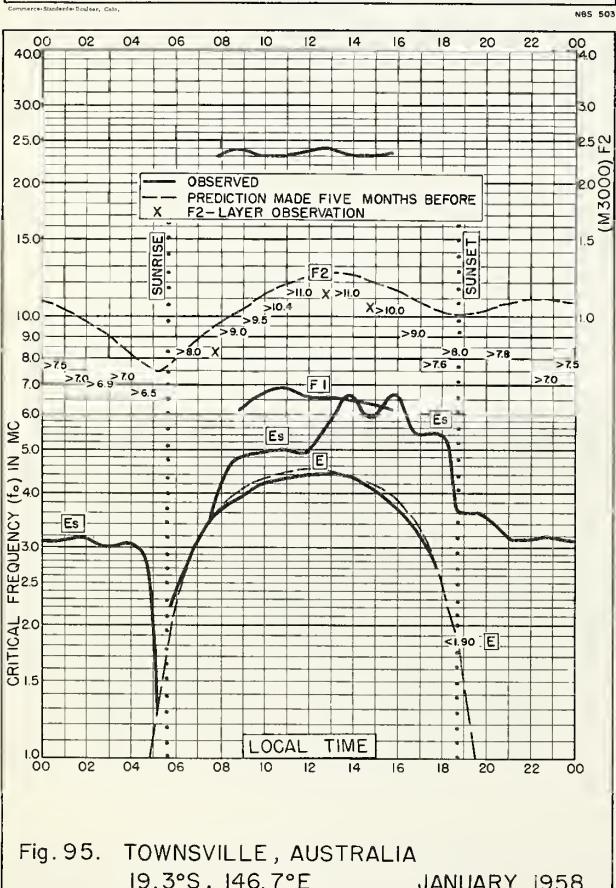


Fig. 95. TOWNSVILLE, AUSTRALIA
I. 19.3° S, 146.7° E JANUARY 1958

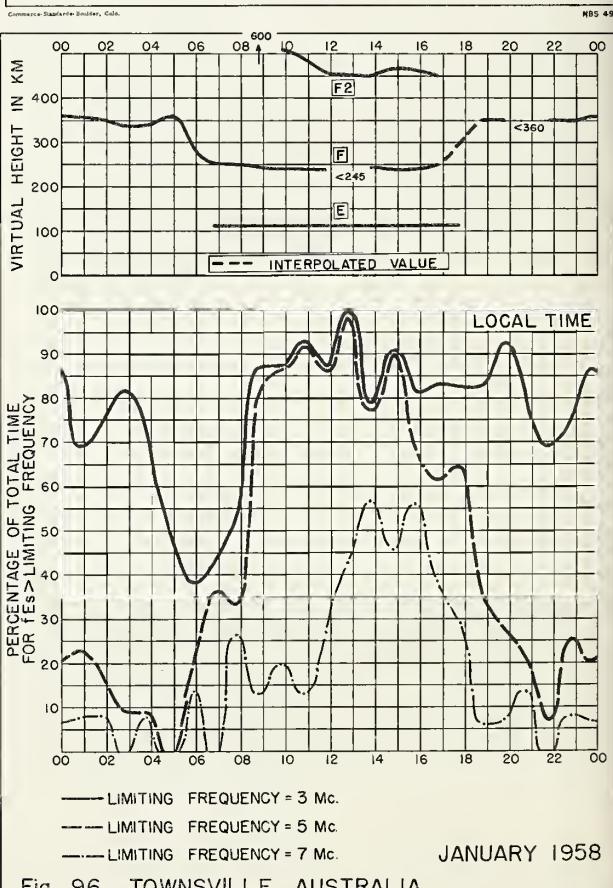


Fig. 96. TOWNSVILLE, AUSTRALIA JANUARY 1958

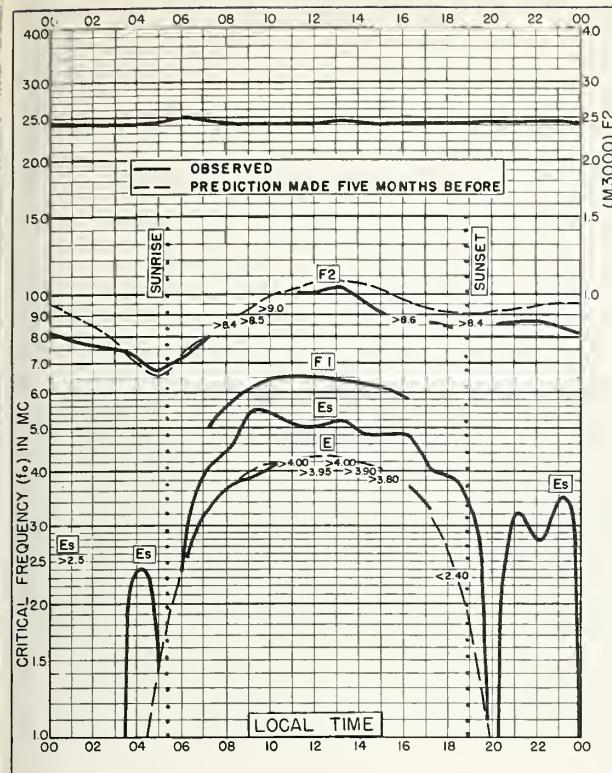


Fig. 97. BRISBANE, AUSTRALIA
27.5°S, 152.9°E JANUARY 1958

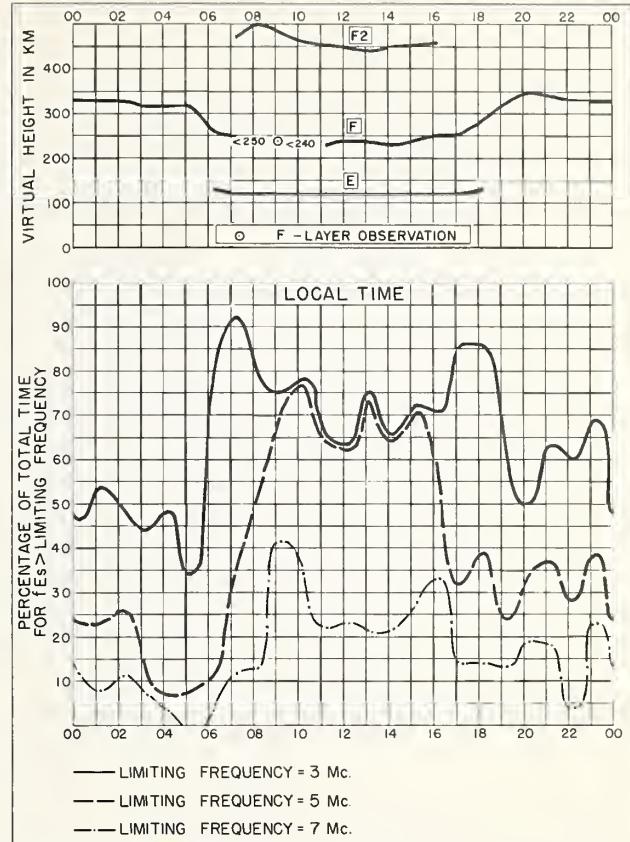


Fig. 98. BRISBANE, AUSTRALIA JANUARY 1958

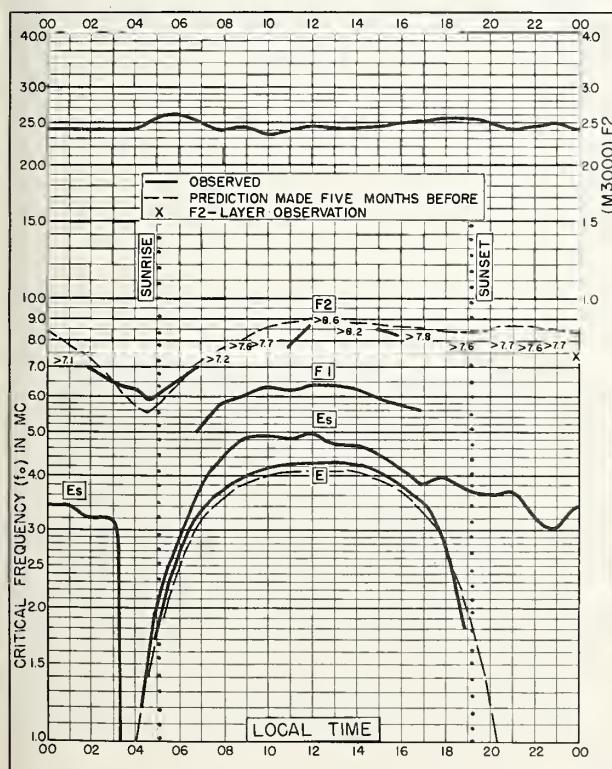


Fig. 99. CANBERRA, AUSTRALIA
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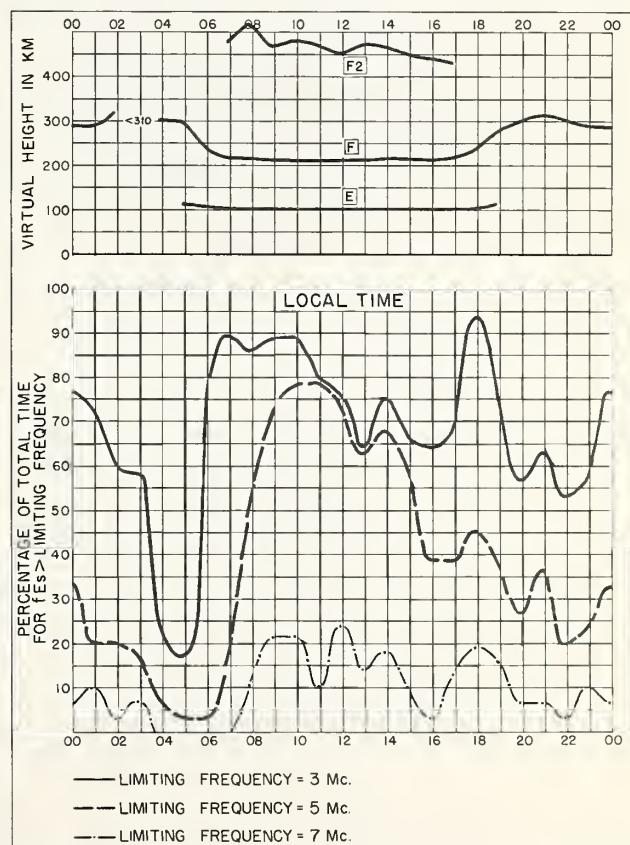
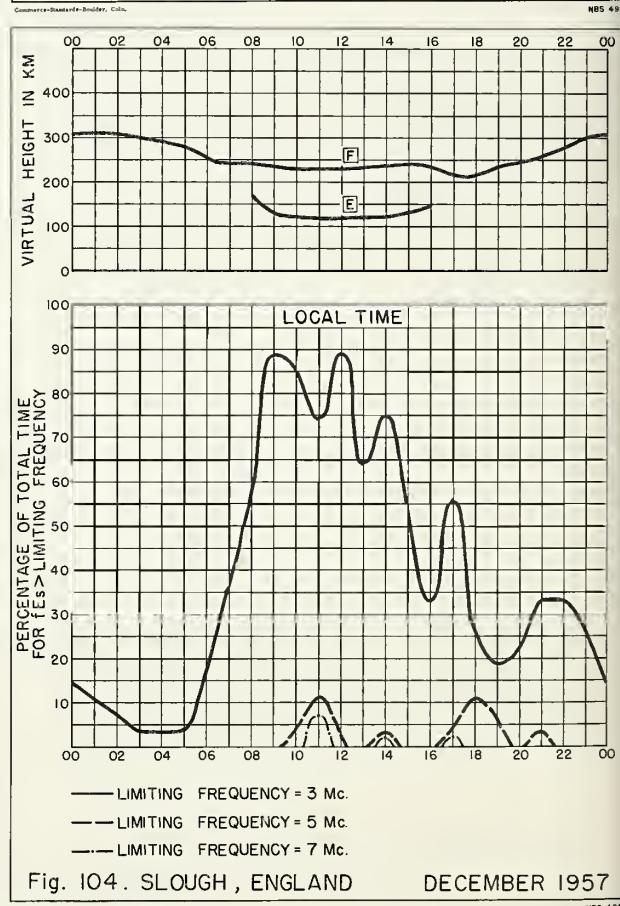
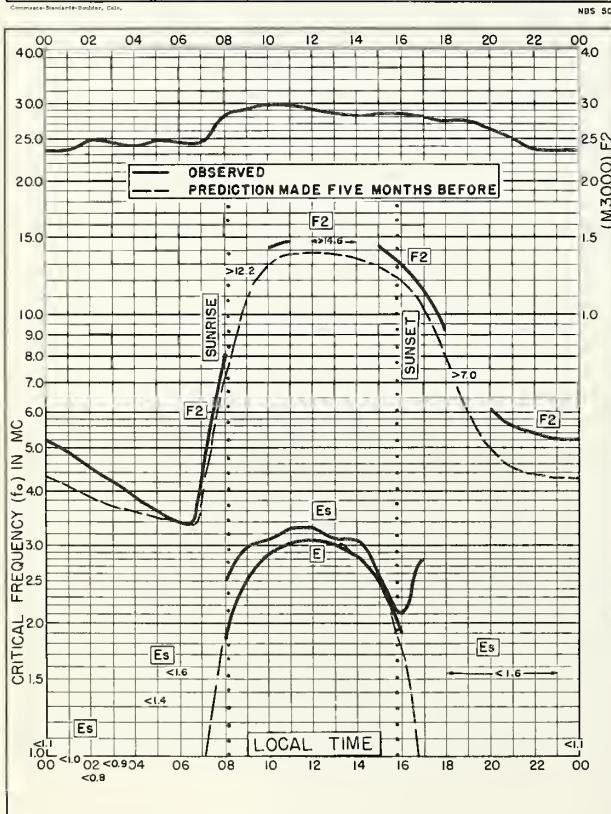
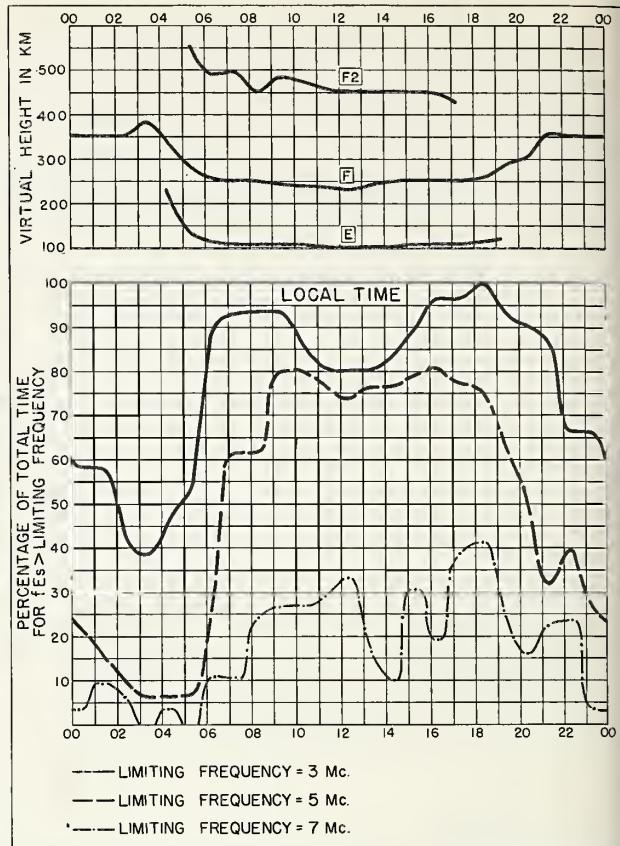
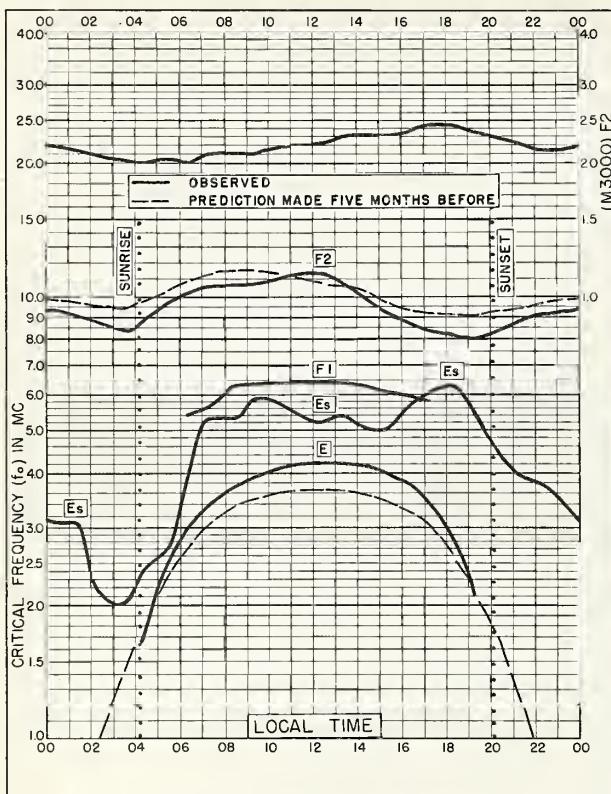


Fig. 100. CANBERRA, AUSTRALIA JANUARY 1958



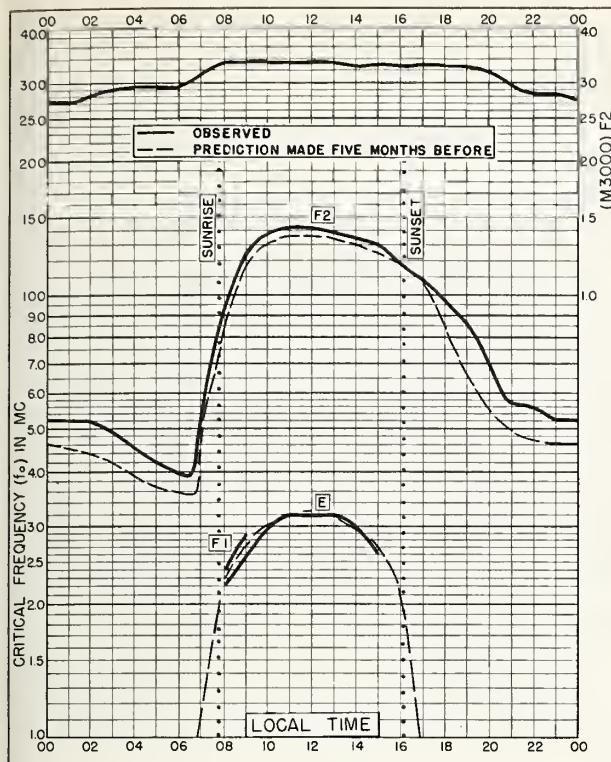


Fig. 105. BUDAPEST, HUNGARY
47.4°N, 19.2°E DECEMBER 1957

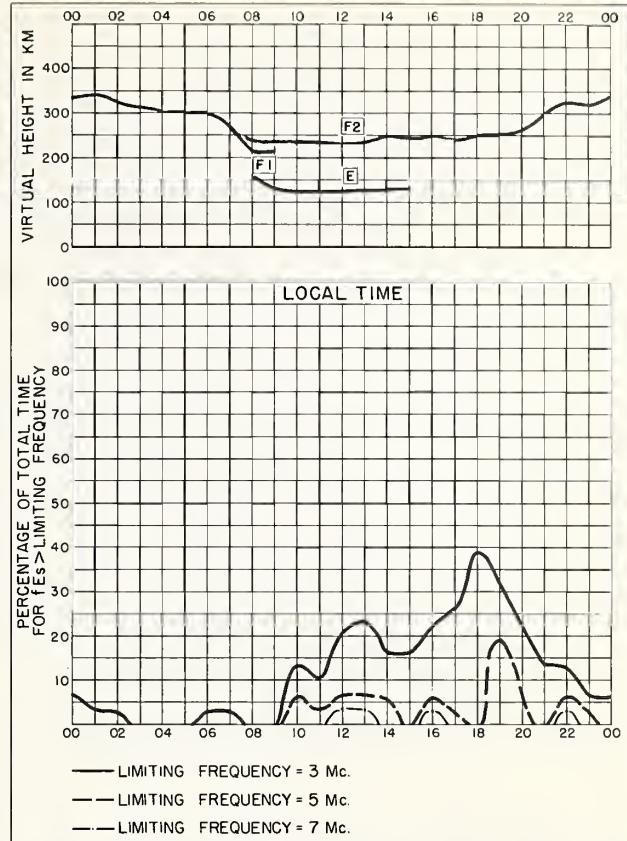


Fig. 106. BUDAPEST, HUNGARY DECEMBER 1957

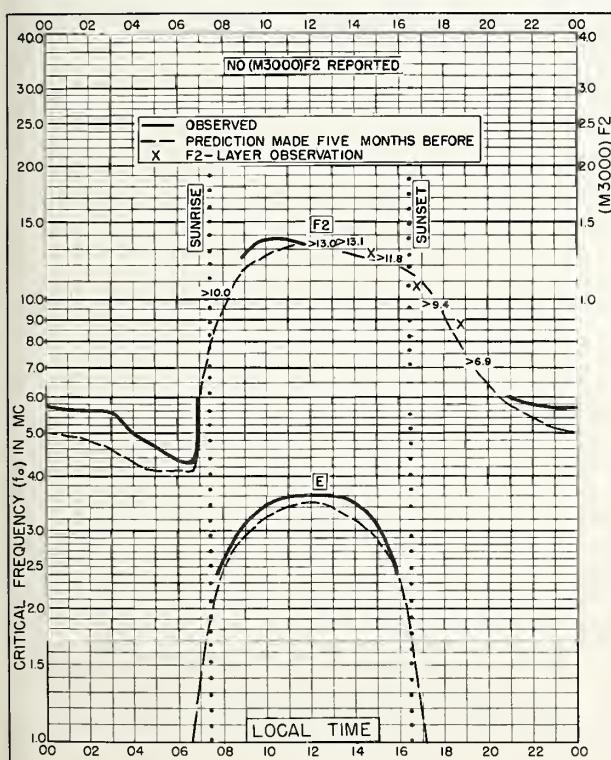


Fig. 107. ROME, ITALY
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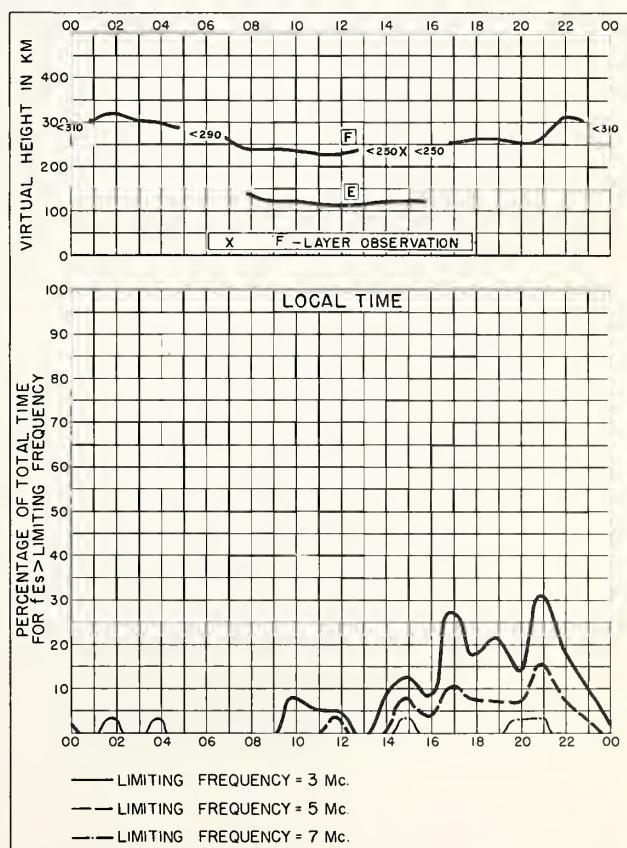


Fig. 108. ROME, ITALY DECEMBER 1957

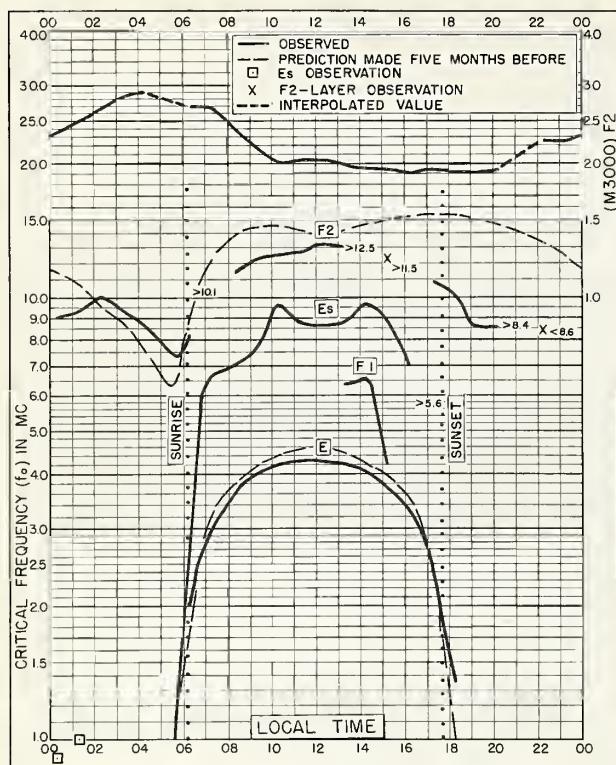


Fig. 109. IBADAN, NIGERIA
7.4°N, 3.9°E DECEMBER 1957

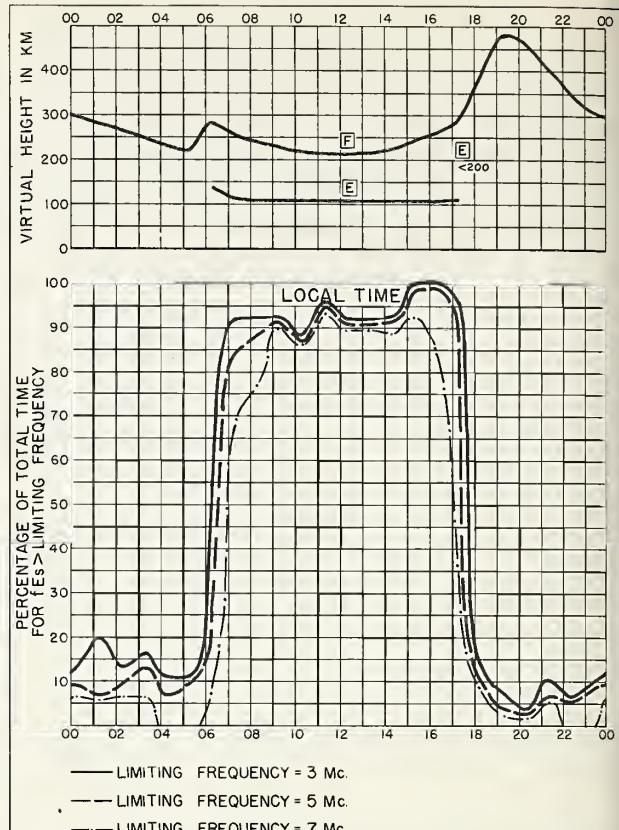


Fig. 110. IBADAN, NIGERIA DECEMBER 1957

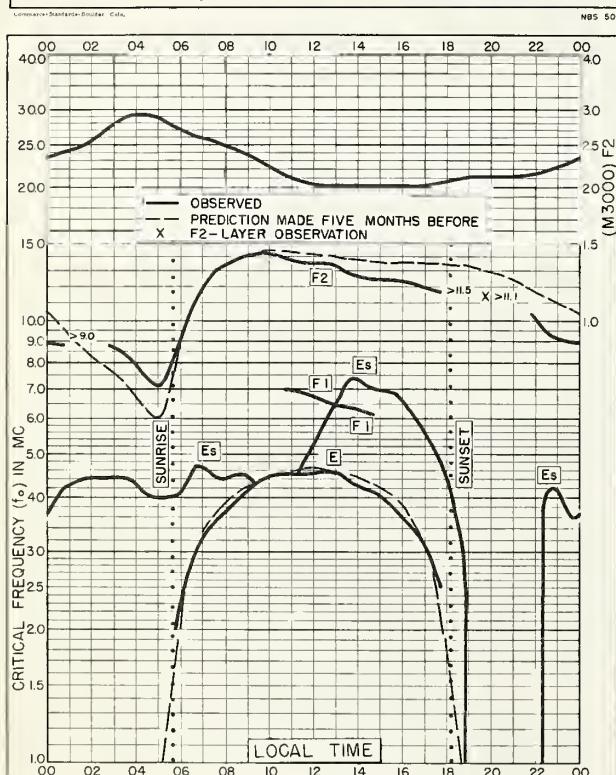


Fig. 111. CHIMBOTE, PERU
9.1°S, 78.6°W DECEMBER 1957

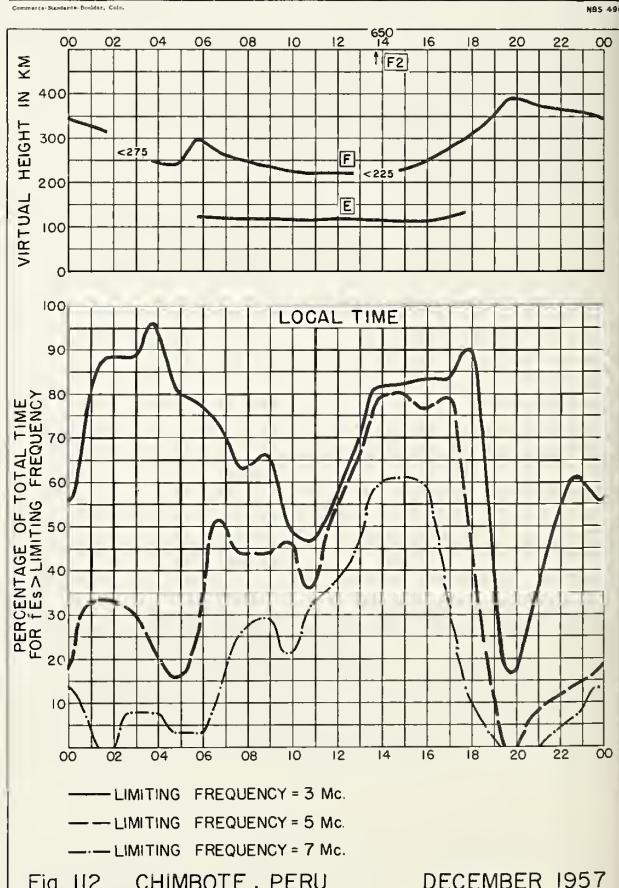
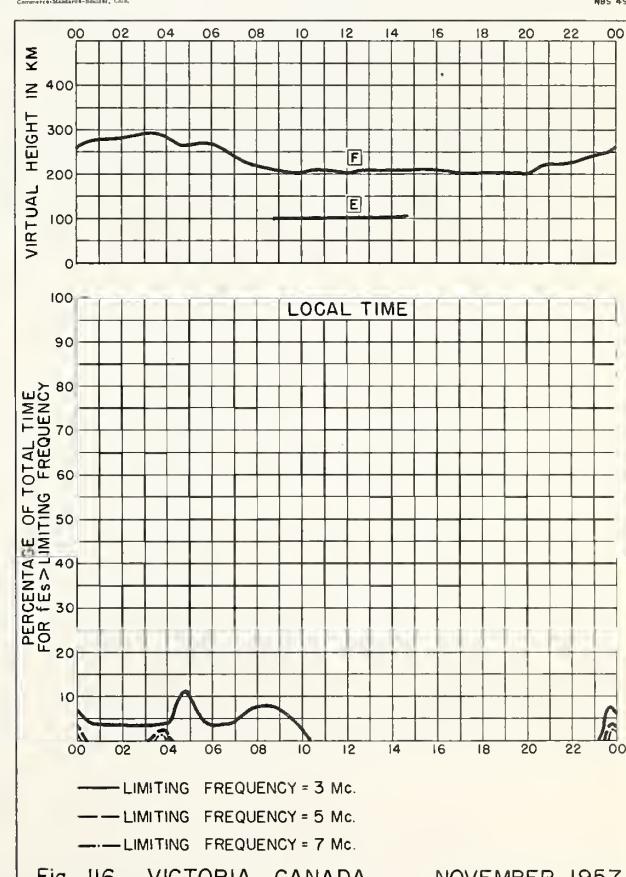
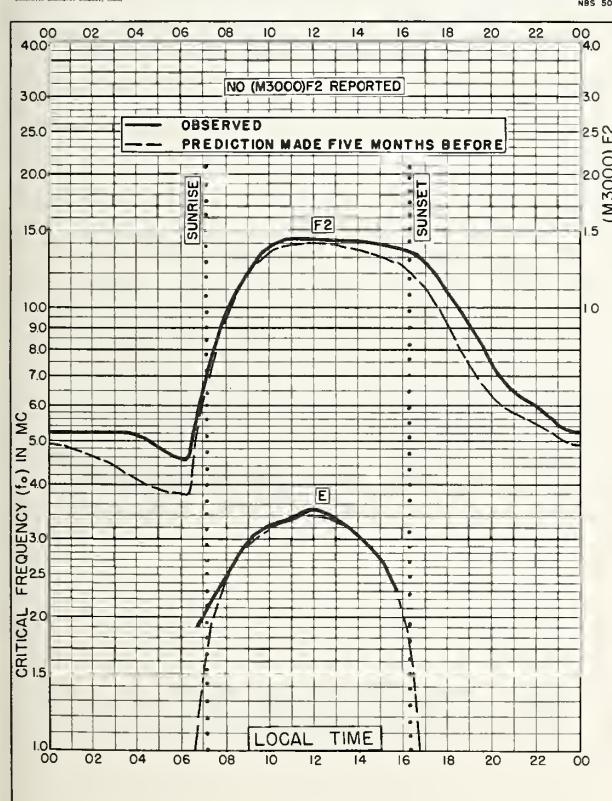
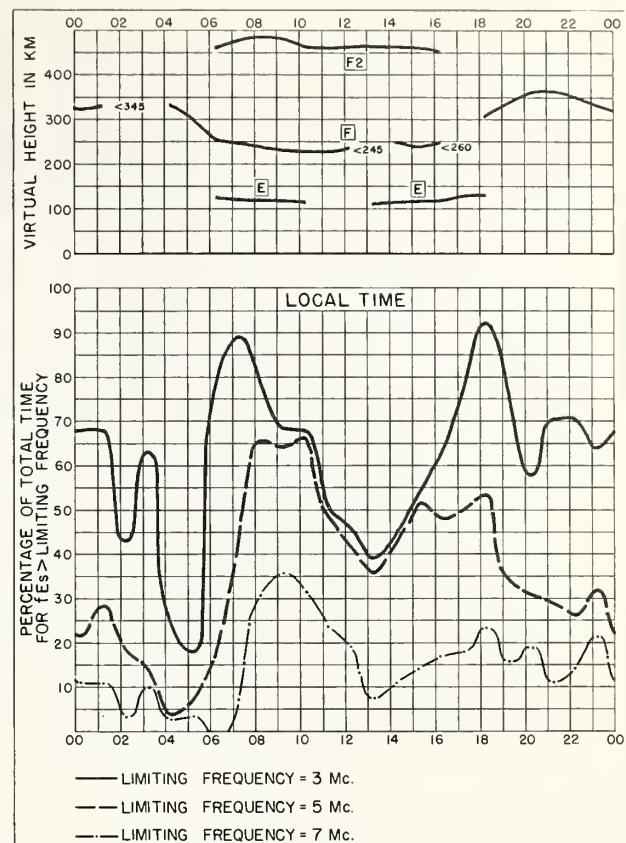
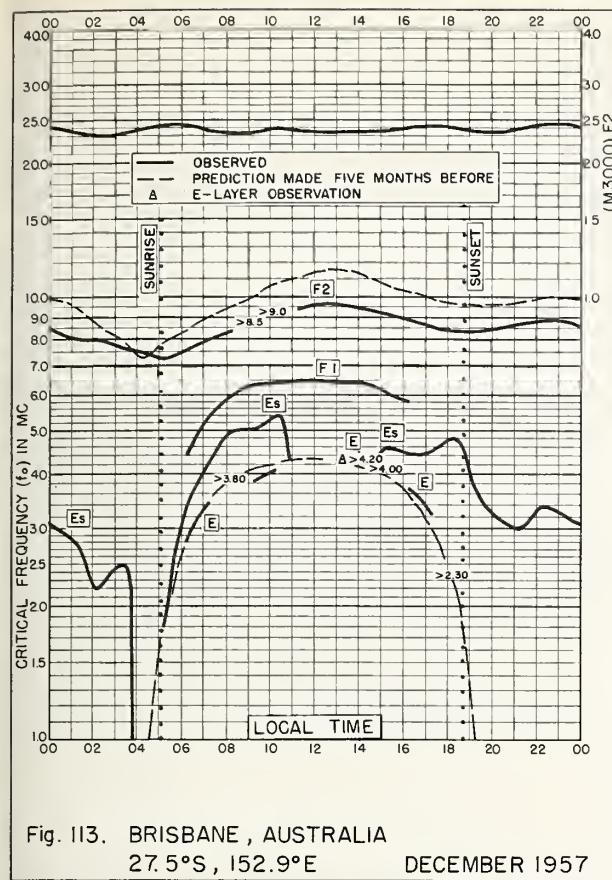


Fig. 112. CHIMBOTE, PERU DECEMBER 1957



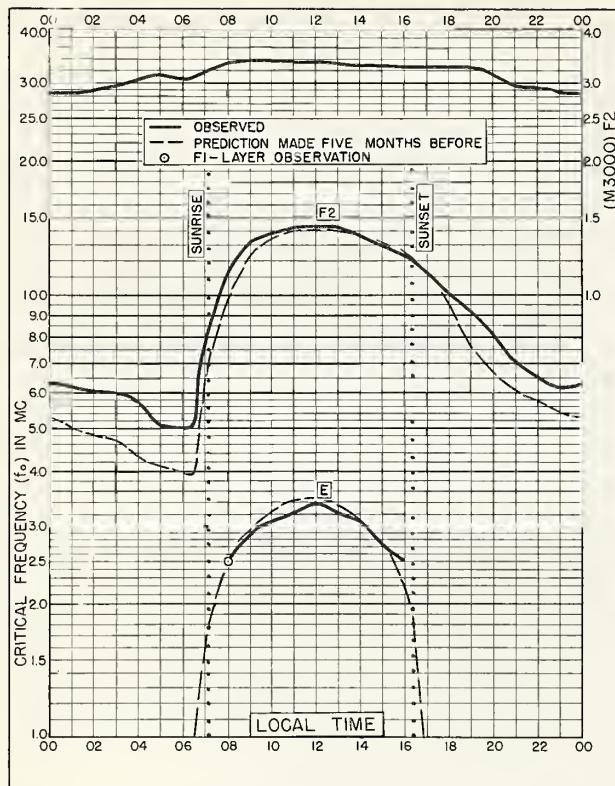


Fig. 117. BUDAPEST, HUNGARY
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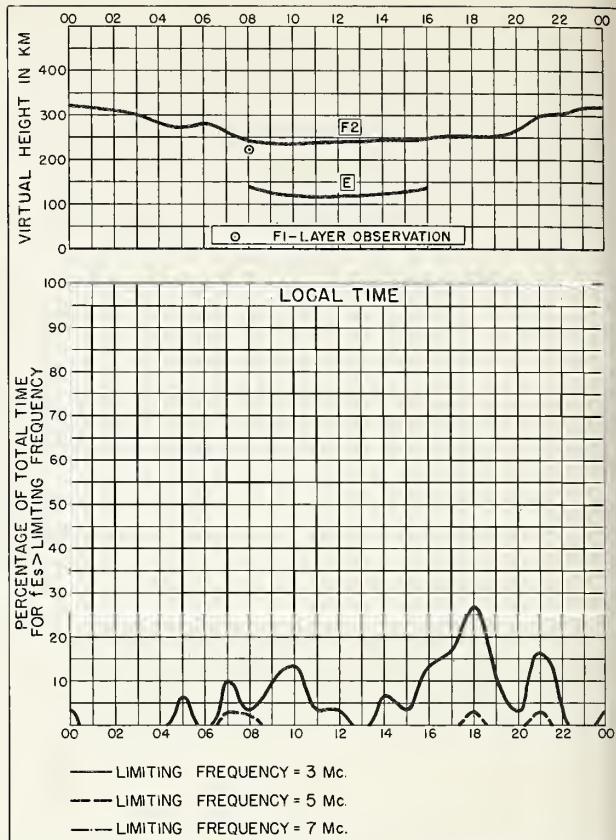


Fig. 118. BUDAPEST, HUNGARY NOVEMBER 1957

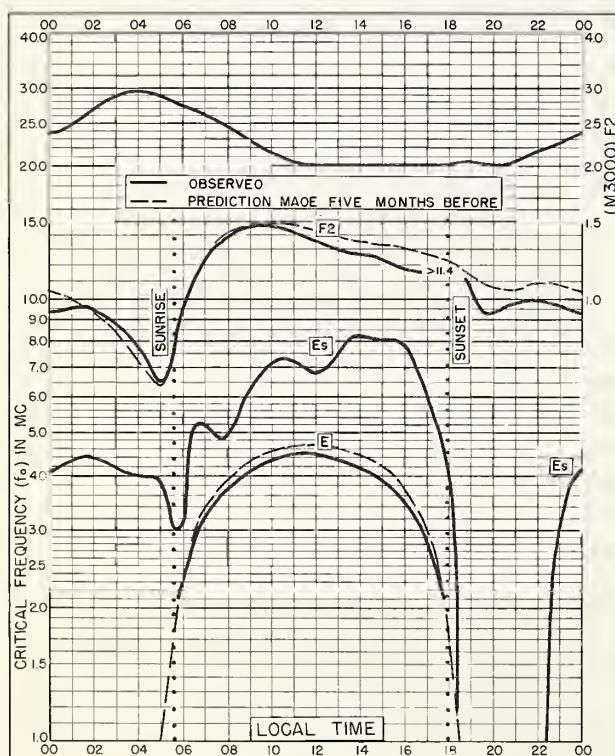


Fig. 119. CHIMBOTE, PERU
9.1°S, 78.6°W NOVEMBER 1957

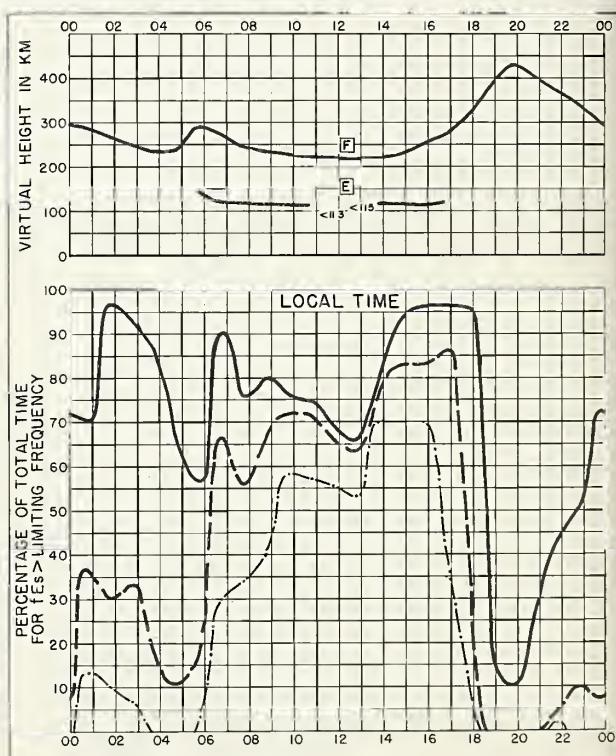


Fig. 120. CHIMBOTE, PERU NOVEMBER 1957

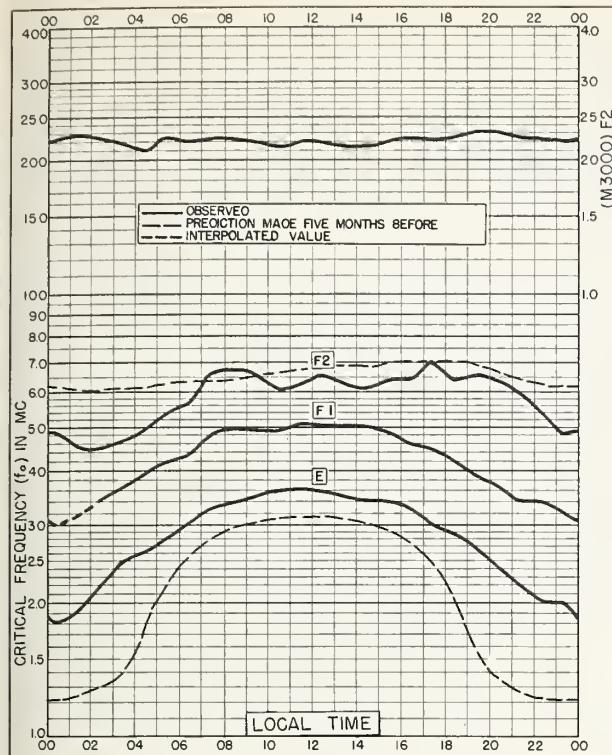


Fig. 121. CAPE HALLETT
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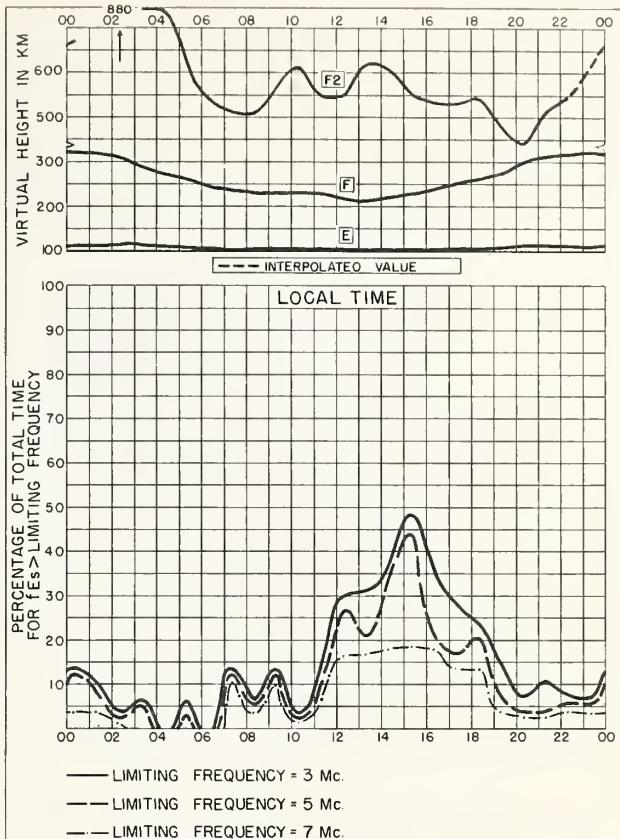


Fig. 122. CAPE HALLETT NOVEMBER 1957

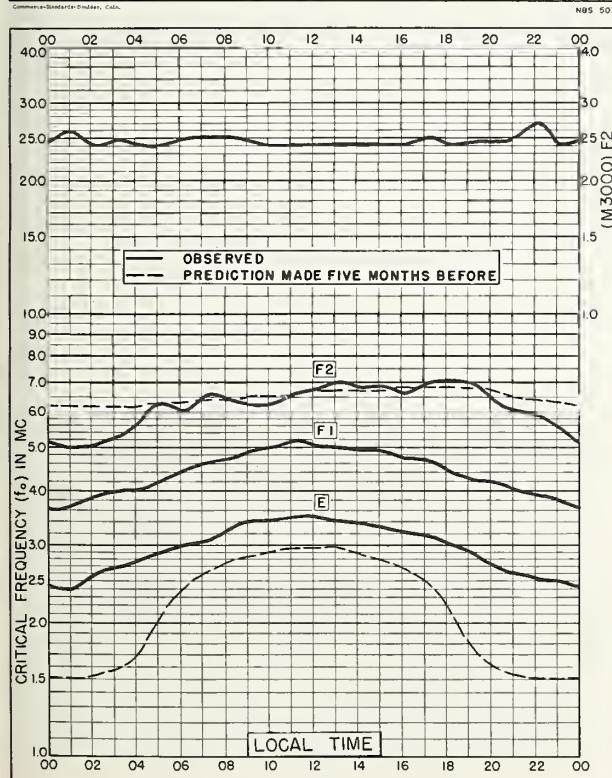


Fig. 123. SCOTT BASE
77.8°S, 166.8°E NOVEMBER 1957

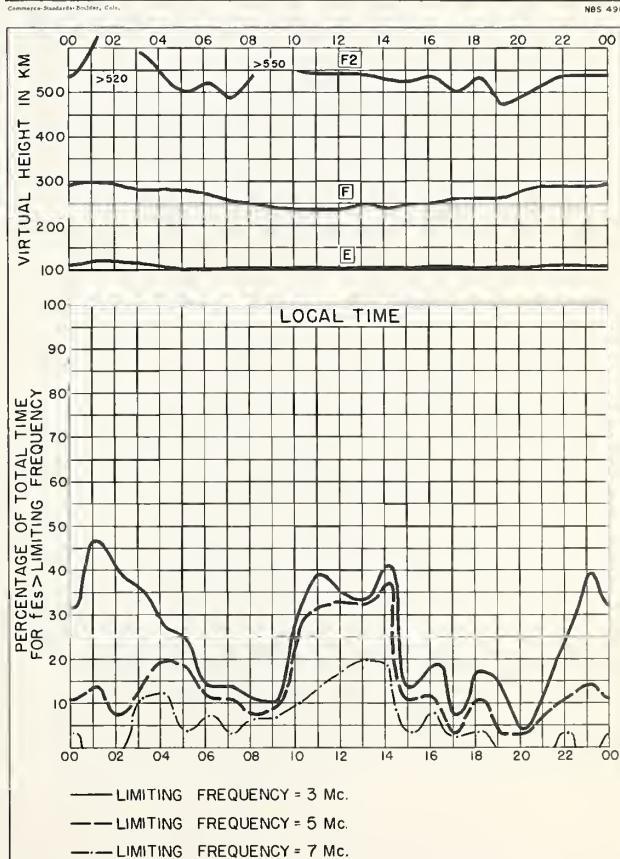
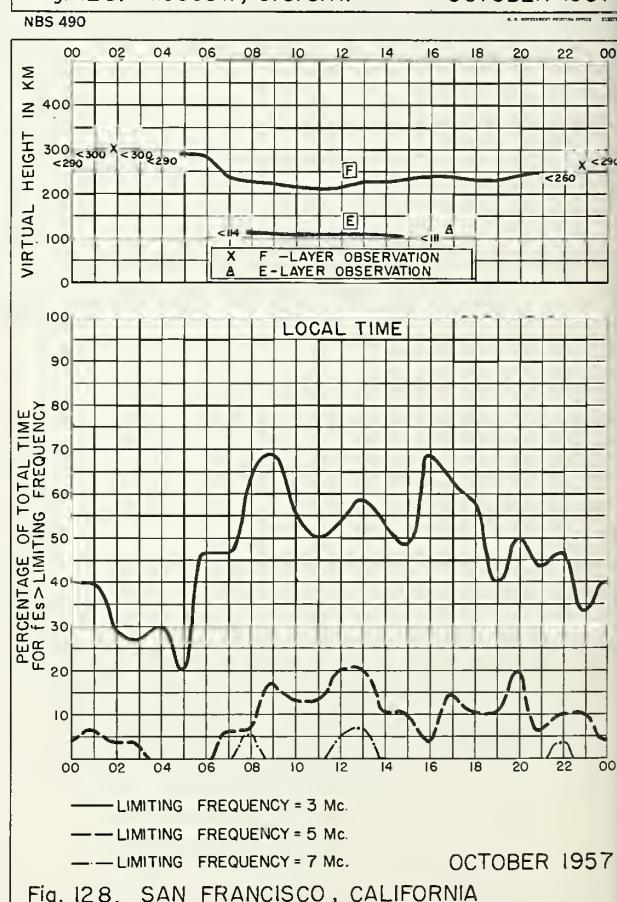
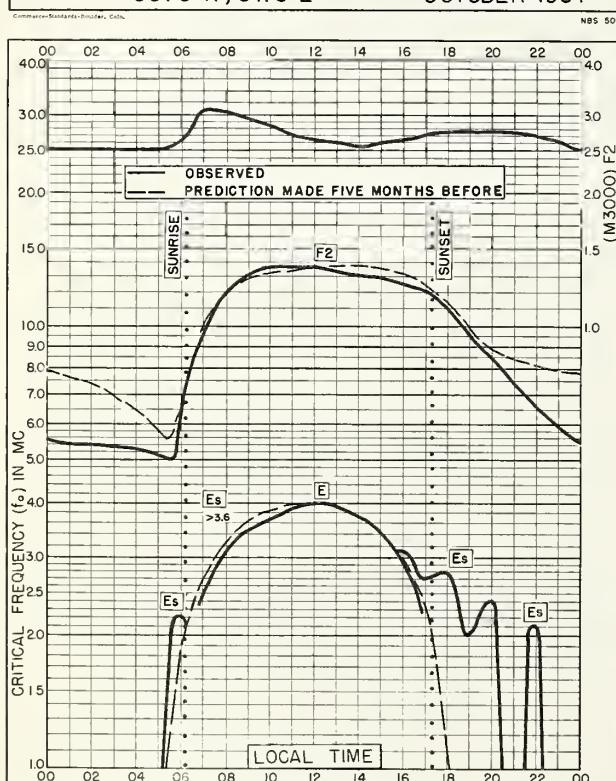
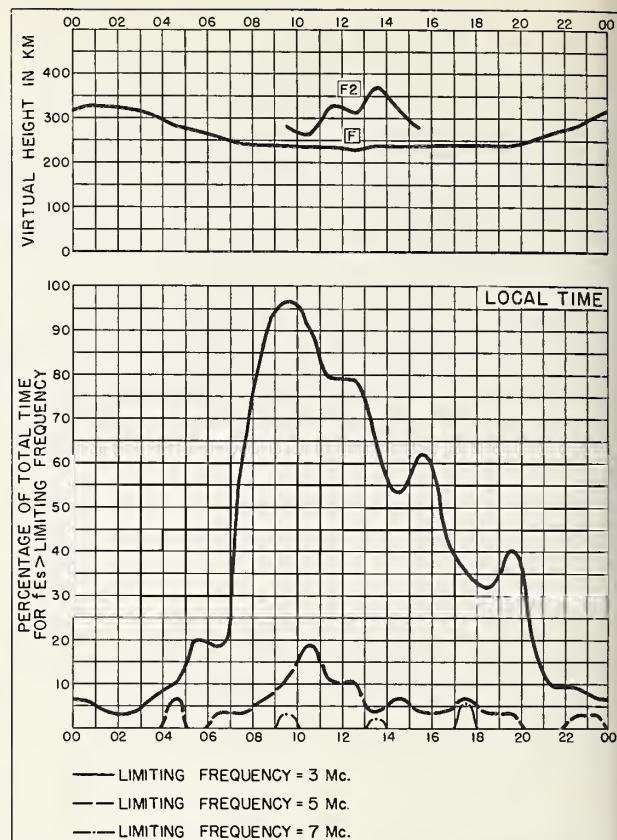
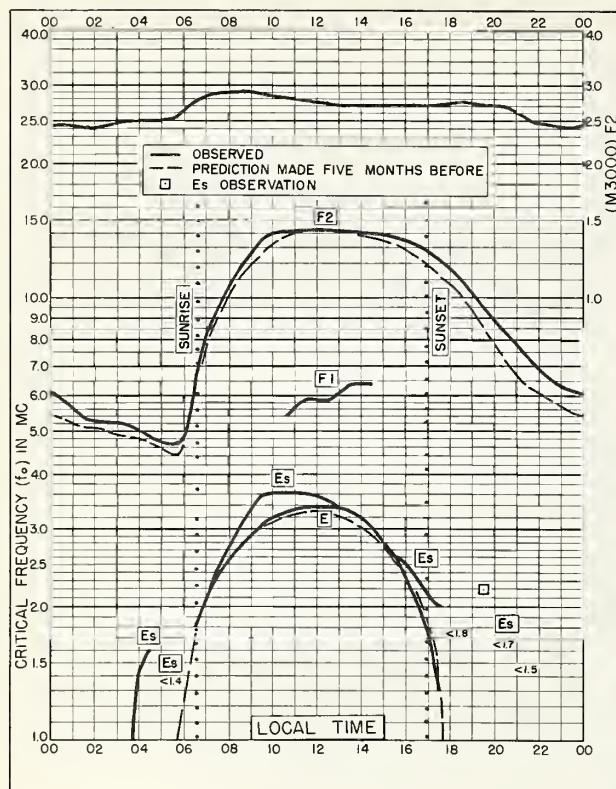


Fig. 124. SCOTT BASE NOVEMBER 1957



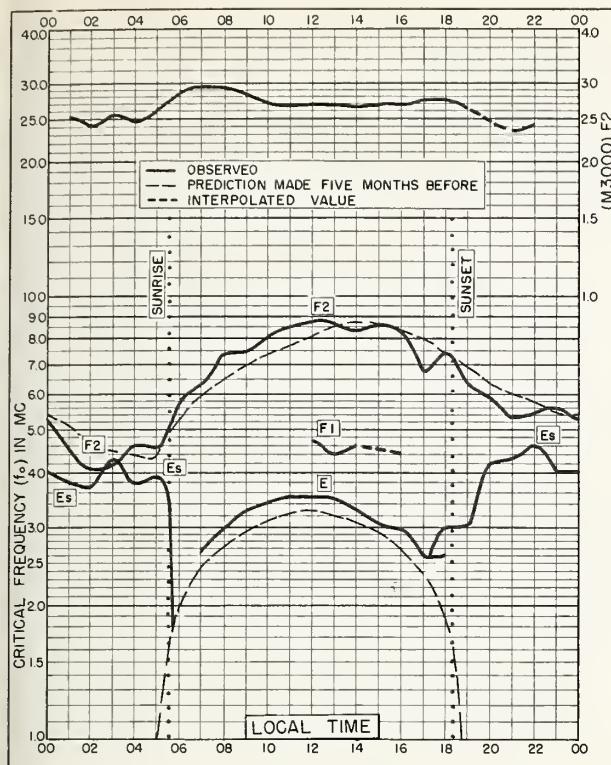
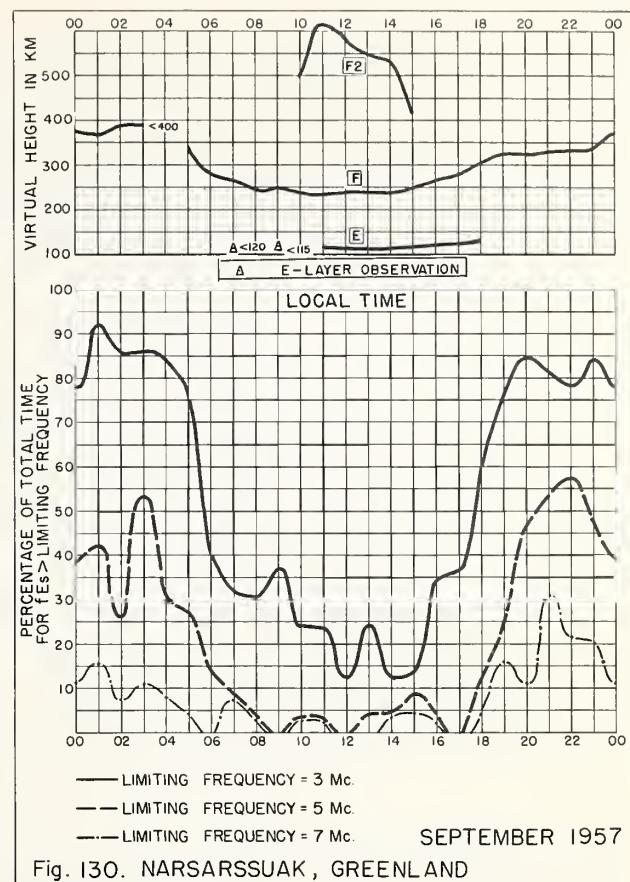


Fig. 129. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W SEPTEMBER 1957



SEPTEMBER 1957

Fig. 130. NARSARSSUAK, GREENLAND

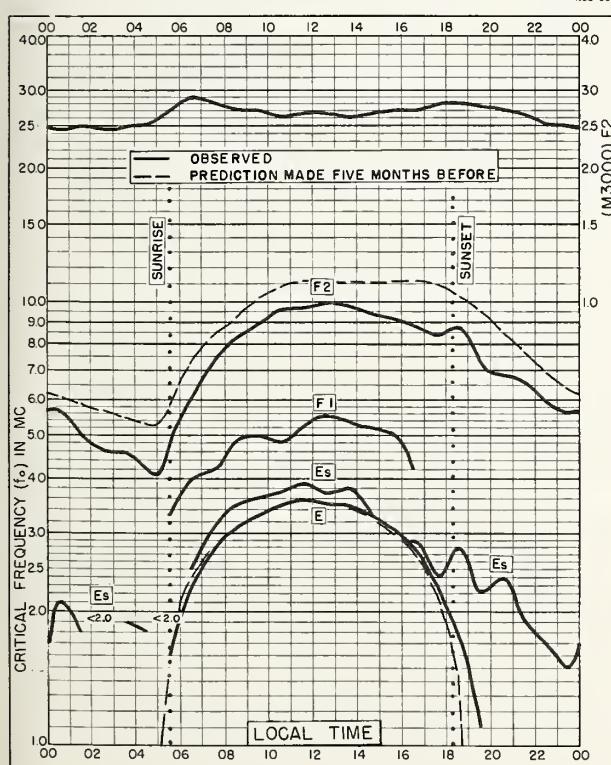
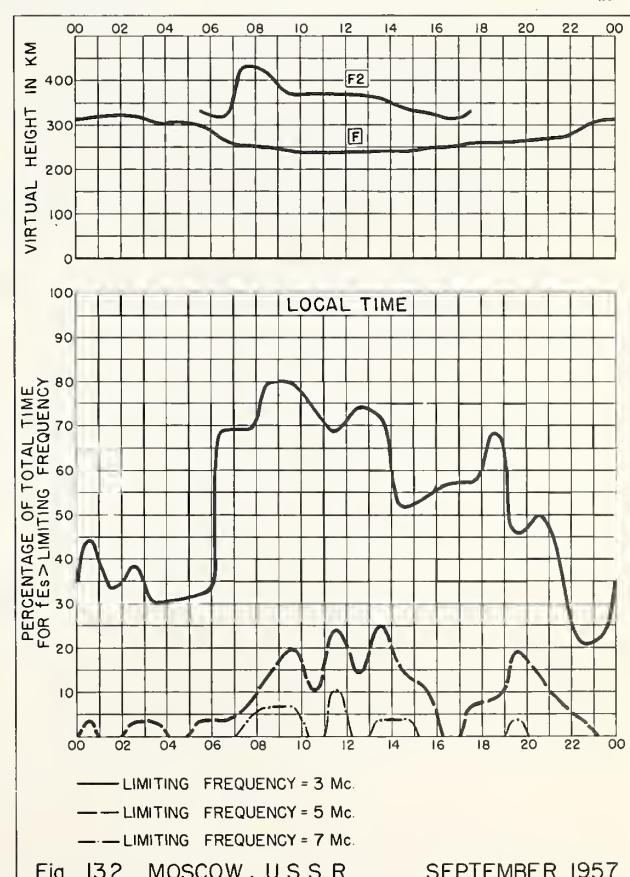


Fig. 131. MOSCOW, U.S.S.R.
55.5°N, 37.3°E SEPTEMBER 1957



SEPTEMBER 1957

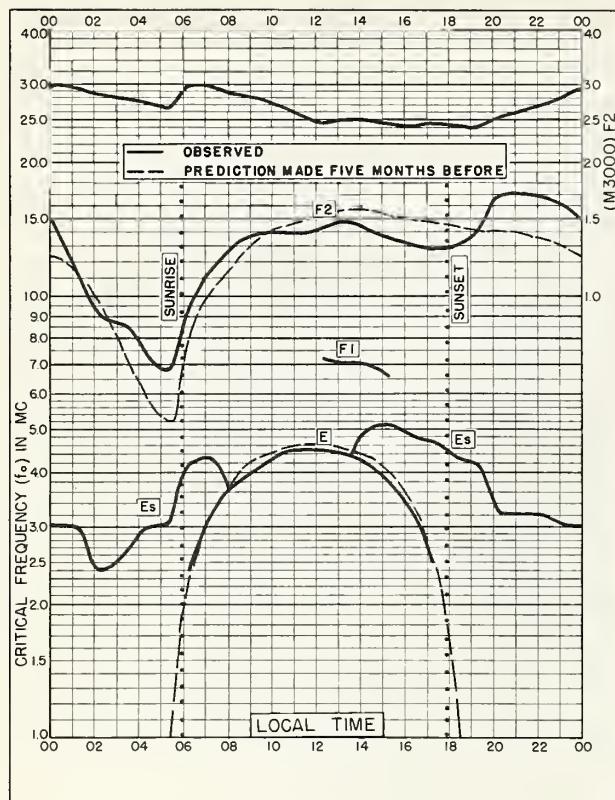


Fig. 133. PARAMARIBO, SURINAM
5.8°N, 55.2°W SEPTEMBER 1957

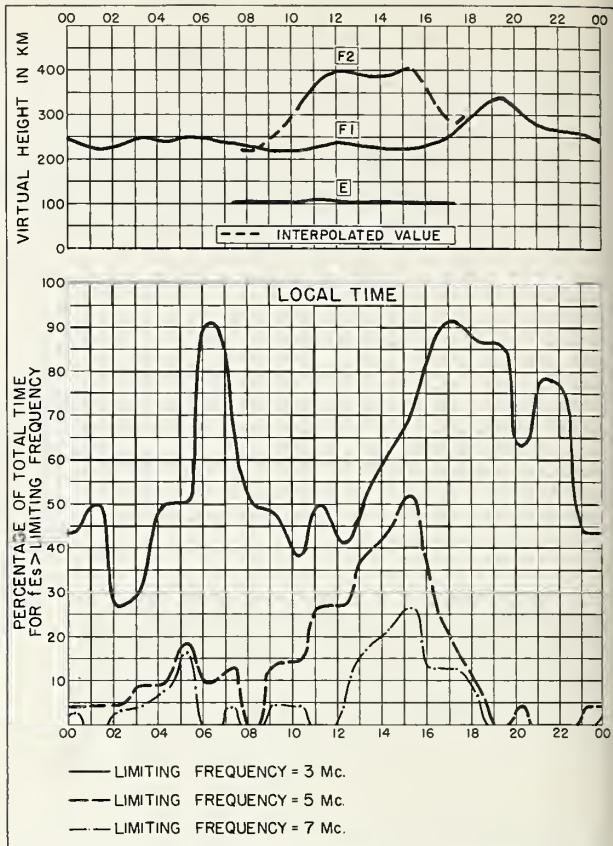


Fig. 134. PARAMARIBO, SURINAM SEPTEMBER 1957

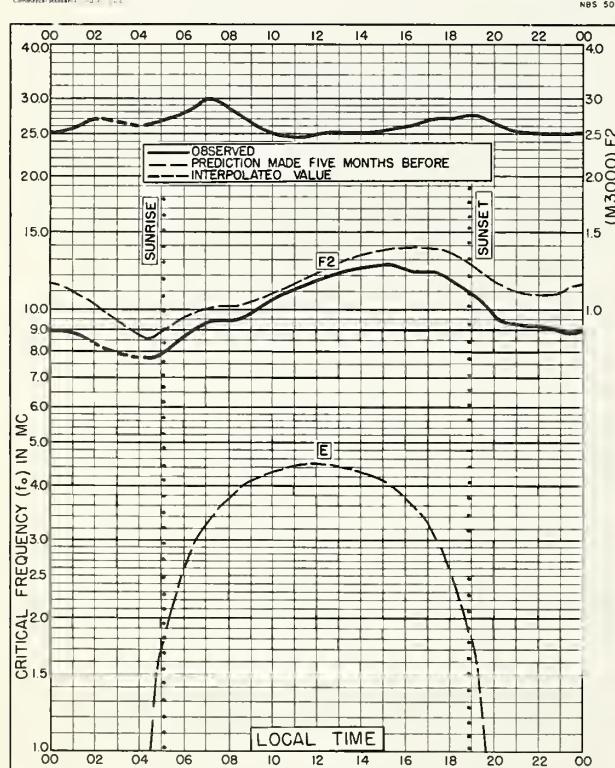


Fig. 135. DELHI, INDIA
28.6°N, 77.1°E JUNE 1957

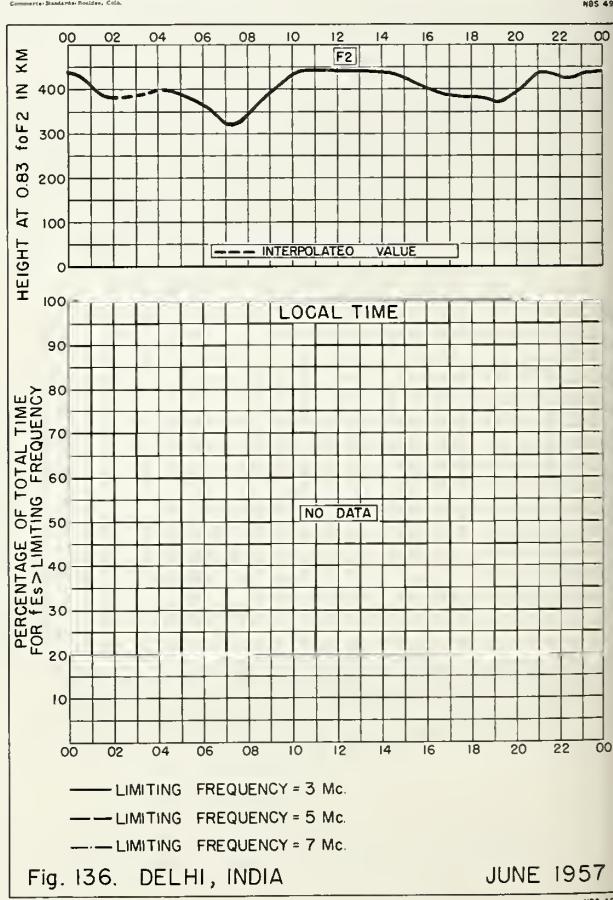


Fig. 136. DELHI, INDIA JUNE 1957

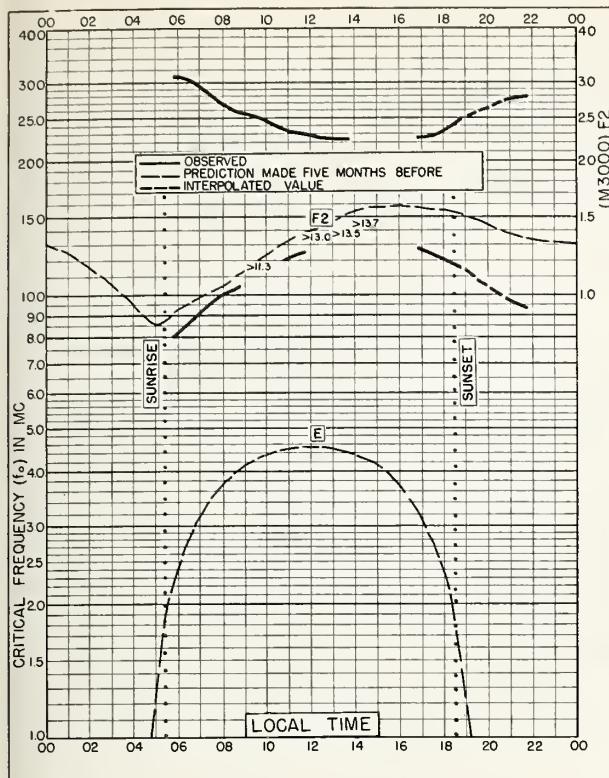


Fig. 137. BOMBAY, INDIA
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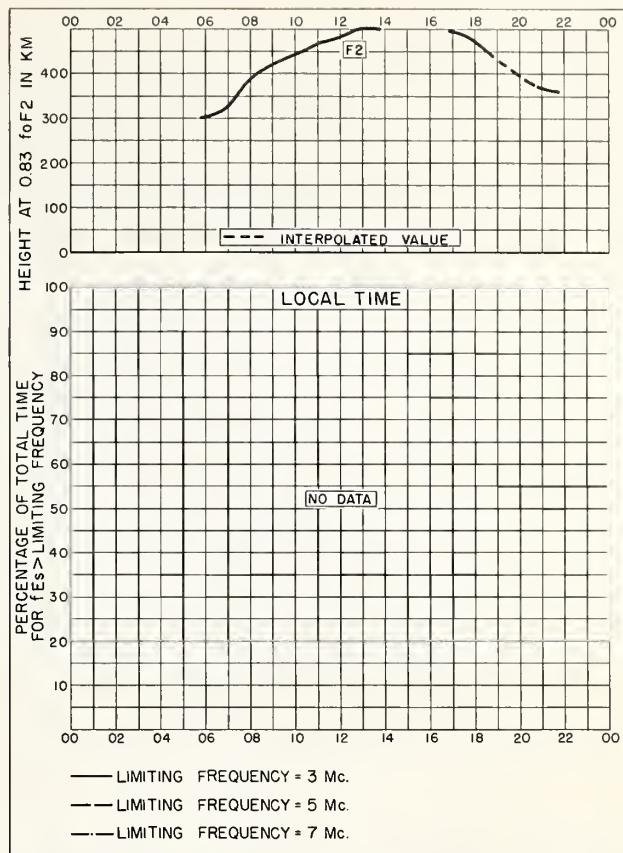


Fig. 138. BOMBAY, INDIA JUNE 1957

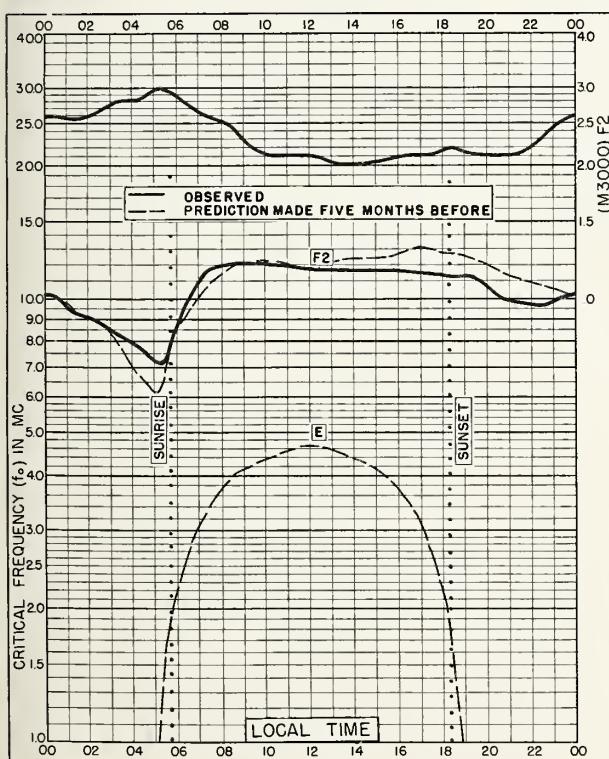


Fig. 139. TIRUCHY, INDIA
10.8°N, 78.8°E JUNE 1957

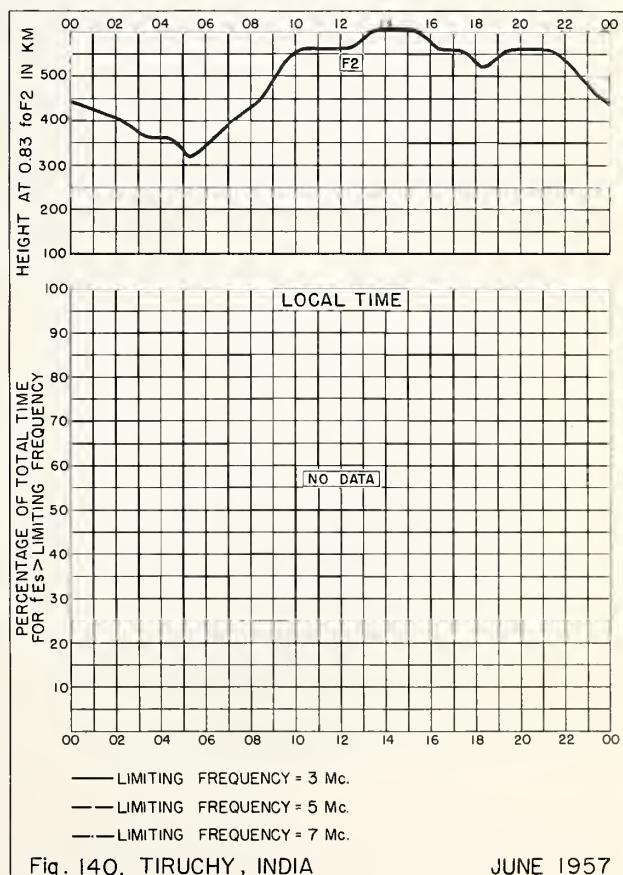
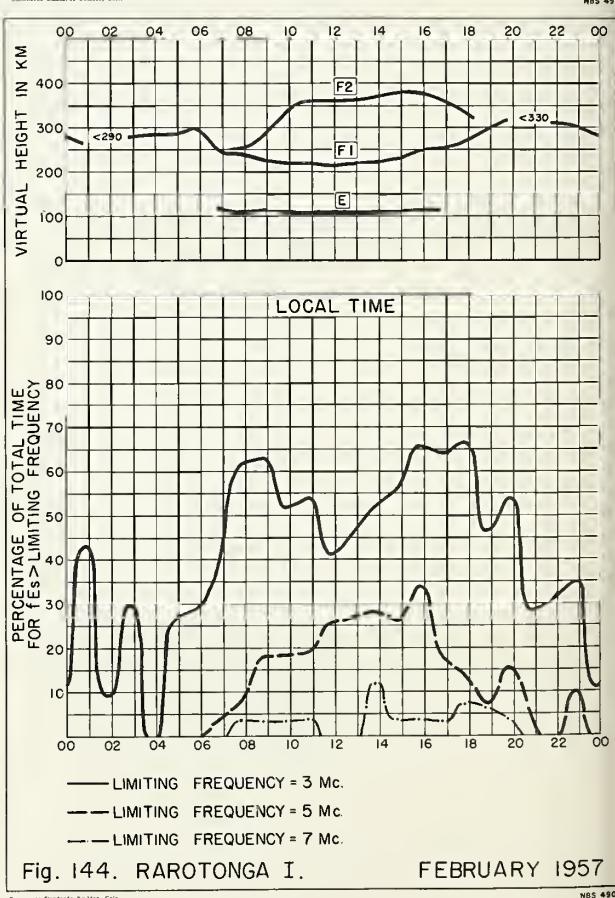
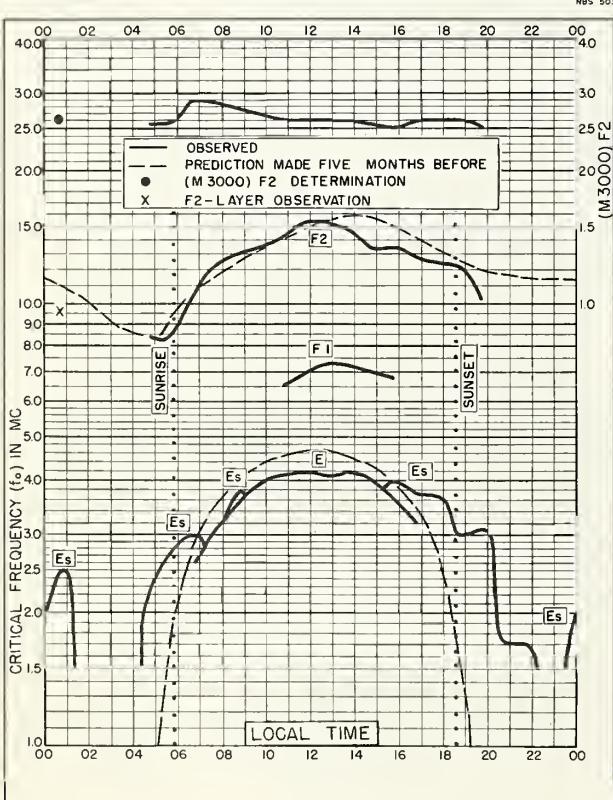
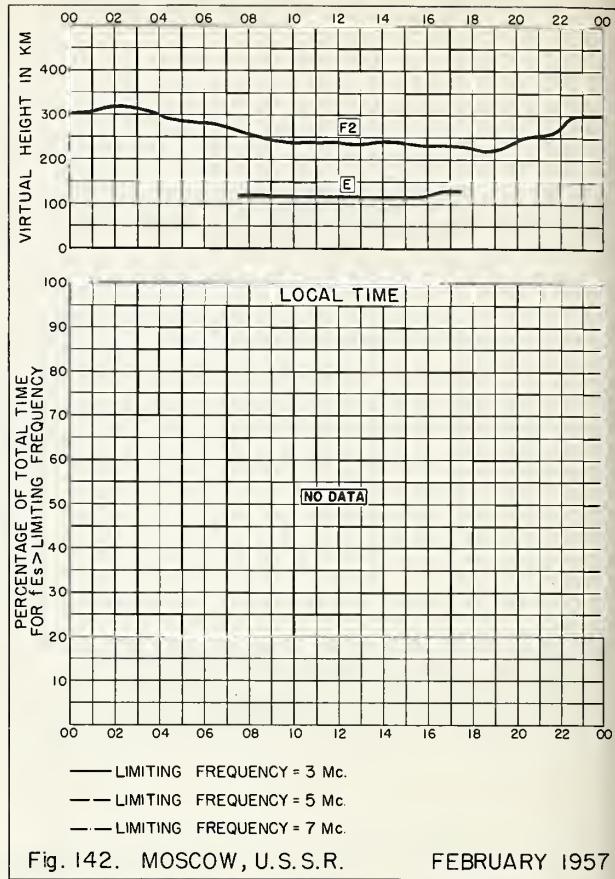
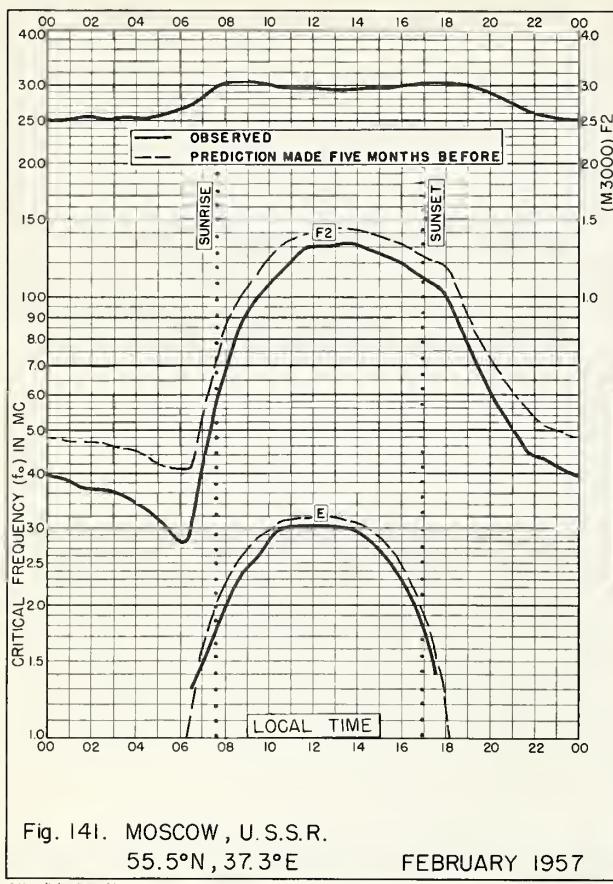


Fig. 140. TIRUCHY, INDIA JUNE 1957



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